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— BRANDUINI Paola

Milan's agricultural districts: food landscape laboratories?

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The standardization of metropolitan landscapes generated by mechanization and agricultural simplification in the past sixty years has broken the link between landscape and food. Reconnecting with the diversity of landscapes allows, as the Milanese example shows, to reconcile product quality, the principle of proximity and food safety. Thirteen years after the establishment of the first agricultural districts promoted by the Lombardy region, this contribution highlights the results in terms of short supply chains, collective catering, environmental services and in particular initiatives for the recovery, enhancement and communication of the landscape as an heritage. We investigated five districts: Dam (Milan agricultural district), Dinamo (3-waters district), Davo (river Olona district), Rice and Frogs rice district and Dama (Martesana channel district).

How have they transformed the landscape? How has an intangible network of supply chain had visible effects? What are the visible effects?

The districts, through the catalysing action of individual farmer initiatives, have offered greater visibility and recognition to the educational and cultural role of agriculture vis-à-vis the city, promoting a model of healthy and sustainable development. The coordinated and aggregating action of the districts was and is in this sense fundamental to overcome the often individualistic way in which farms work.

The districts have been able to carry out various actions to ensure the management and improvement of the landscape from an environmental point of view, such as hedges and trees planting, canal banks re-naturalisation and lamination basins management, collaborating with municipalities and park authorities. They have promoted numerous cultural initiatives, committing themselves to cooperatively managing the built rural heritage, such as mills, and keeping the intangible heritage alive through the recovery of 'agricultural' traditions, such as the rice-harvesting festival, as well as promoting gastronomic events, such as the Rice and Frogs festival.

In this sense, the branding of local identity linked to the landscape is the way to recognise the quality of the landscape itself, focusing not only on the uniqueness of the productions (DNA-certified rice), but on the management of a landscape with a high environmental quality and a strong social role. The Milan agrarian landscape, although apparently much altered, conserve many permanencies of historical landscape structures: some traditional agricultural practices have been recovered as they provide a high environmental quality (especially in terms of biodiversity and water management) and offer job to social categories in difficulty (re-employment, physical and mental disabilities, rehabilitation of former drug addicts and prisoners).

Keywords: landscape system, landscape heritage, landscape education

Food at the centre of socio-territorial demands and the relationship with landscapes

Profound changes in the perception of healthy and locally produced food have been emerging for several years. In a context characterised by global warming, scarcity of natural resources, controversies over agricultural policies, and the emergence of new residential models responding to the need to change their lives and connect with nature, consumers are looking for greater legibility of products through better information on their traceability. They therefore want to regain a form of trust with producers, which leads them to choose, for example, products from organic farming, markers of a relationship that they often define as more virtuous in terms of production and distribution conditions. The inhabitants of an area seek proximity to the places of agricultural production and therefore seek relational proximity

with producers. The example of the growth of the Gas, whose membership leads to a process of relational commitment, is eloquent from this point of view; the actors of collective catering, the shops of local producers, open-air markets, etc. proceed in the same direction.

Citizens, in their demand for proximity of food, also seek a quality of landscape that guarantees them a better quality of life: they are therefore ready to defend the permanence of agricultural land use around their residences and to guarantee the land to farmers, who have taken on a role as custodians of the landscape through the practice of a multifunctional agriculture providing products and services. Citizens mobilise with petitions, committees and demonstrations, in person and through social networks, in support of farmers if they are threatened by the implementation of urban projects. Well-maintained planted and cultivated spaces are a public good, on a par with schools and hospitals (Branduini, 2016).

In Milan, there has been a progressive awareness and development of different ways of protecting agricultural land on the part of the institutions (Southern Agricultural Park) and, in parallel, forms of encouragement for the valorisation of production and territory on the part of farmers (small parks and food districts) who have built new relationships with citizens.

The contribution investigates the actions undertaken by the Districts and their effects on the landscape. How does the intangible network of the food supply chain have visible effects on the landscape? What actions undertaken by the Districts enable the preservation of tangible and intangible landscape features? Which forms of governance implemented by the Districts may be extensible? After a brief excusus on the evolution of the protection and enhancement of the food landscape in Milan, the environmental and cultural actions undertaken and the forms of governance implemented are analysed to understand their tangible and intangible effects on the landscape.

From park to districts: from protection to enhancement

In Milan, awareness of the cultural and landscape value of agriculture is the result of a slow acquisition. The activation of public policies and planning tools since the 1990s has consecrated Milan on the European scene as a city in the vanguard in terms of enhancing the rural heritage. The preservation of agriculture, landscapes and rural heritage has been the pillar of an approach aimed at renaturalising the city and reconciling intensive agriculture with the inhabitants' desire for nature and urban leisure.

The PASM Parco Agricolo Sud di Milano, established in 1990 as part of the 'environmental movement' that emerged in the 1970s to preserve the agricultural land of 61 municipalities from urbanisation, has allowed the creation over time of a vast green belt around the Lombard capital, as well as the protection of rural buildings of historical landscape value (the farmsteads). The landscape-product link is the result of the 'environmental quality farm' label established by the park in 2010 to which 27 farms[1] now adhere. The label guarantees sustainable practices in cereal and livestock farming, based on the protection of the environment, the diversification of the landscape mosaic with the extension of woods and hedges, as well as the marketing through local markets of food products (cured meats, meat, milk, cheese, yoghurt, honey, rice, cereals, fruit and vegetables).

Within the territory of the Parco Sud, 'groups of citizens together with farmers'. have come together in associations for the defence of the agricultural landscape, recognised as an identity heritage, also identifying territorial limits and taking on the definition of a park, such as the Parco Agricolo del Ticinello[2] and the Parco delle Risaie[3]: these are bottom-up initiatives that bring residents and farmers closer together and complement the large-scale, top-down protection structure of the Pasm.

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[1] The Resolution of the Provincial Council Rep Gen.15/2010, deeds n.262391\9.9\2009\17 of 22 April 2010 approved the 'Regulation for the concession in use of the mark of the Parco Agricolo Sud Milano'.

[2] The idea of the Park was born in 1982 while the Defence Committee dates back to 1989. www.parcoticinello.it

[3] The project was born in 2008; https://www.facebook.com/AssociazioneParcodellerisaieMilano/

With the regional law of 23 January 2007 on the development of instruments for the competitiveness of enterprises, the Lombardy Region has promoted the creation of agricultural districts, i.e. 'networks of agricultural enterprises' to support high quality production and preserve the identity of the Lombardy landscape as a sign of food quality and cultural resource. These districts all recognise a territorial identity based on natural (Olona, Adda) and artificial (Naviglio Grande, Pavese, Martesana) watercourses, on cereal products (especially rice) and animal husbandry (milk, cheese, meat and cured meats), as well as on the proximity to the city of Milan, which has generated a biunivocal relationship of food and landscape (Branduini et al. 2016).

The regional districts move within the national legislation on food districts Legislative Decree 228/2001, Article 13 of which summarises their role of 'promoting territorial development, cohesion and social inclusion, favouring the integration of activities characterised by territorial proximity, guaranteeing food safety, reducing the environmental impact of production, reducing food waste and safeguarding the territory and rural landscape through agricultural and agri-food activities'. Eight types of districts are identified (Art. 13, paragraph 2), including rural, quality agrifood, in rural urban and peri-urban areas, and biodistricts. There are currently 194 of them, so much so that in 2021 a National Council of Food Districts was set up at the Ministry of Agriculture, which aims to, among other actions to compare and consolidate the network, protect Italy's enormous cultural, tourist, landscape and food and wine heritage .

Milan Districts at a glance

The Consorzio Dam - Distretto agricolo milanese (Dam Consortium - Milan Agricultural District) was established in 2011 with the aim of enhancing agricultural activities and supporting businesses in the sector operating in the municipality of Milan. In 2012, a Memorandum of Understanding called AQUST Milano Metropoli Rurale was signed with the Municipality and Province of Milan and the Lombardy Region, which defines the Dam Consortium as a 'privileged interlocutor for the neo-ruralisation of Milan so that it can return to being, as in past centuries, a country town'. The consortium is made up of 31 farms, almost all of which are tenants of the Milan municipality, which cultivate an area of approximately 1,500 hectares and are mainly dedicated to rice growing, dairy and beef cattle breeding, and nursery farming. The aim pursued by the Consortium is the protection of common goods, soil and water, and landscape-environmental redevelopment, starting from the rich heritage of existing farmsteads and farm centres. The key actions of the District Plan[4] are on the one hand aimed at increasing production and marketing (short supply chain and large-scale distribution at Esselunga), and on the other at improving the relationship with citizens in terms of both territorial protection and recovery from environmental degradation, and the provision of environmental services (Agriparco company for mowing lawns in urban areas) and landscape redevelopment for the community (Integrated territorial Plan PIA *Mater alimenta urbes*[5])

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[4] Drafted in 2011 following accreditation as a Rural District by the Lombardy Region.

[5] https://www.comune.milano.it/aree-tematiche/pnrr-fondi-europei-e-nazionali/progetti-ue/mater-alimenta-urbes

[fig.1] Policy brief on a project action of the Milan Food Policy, Short supply chains for Milan 'MATER ALIMENTA URBES'. One action deals explicitly with rural heritage. Source: Comune di Milano[6].

Dinamo - Distretto neorurale delle tre acque, was established in 2013 in the area between the Villoresi Canal, the Naviglio Pavese and the Ticino River. These waters hold the historical memory of the territory and considerable environmental values. It currently gathers 33 companies whose missions are: the containment of land consumption, the promotion of sustainable management of forest resources and organic and conventional agricultural production, the improvement of metropolitan agricultural activity and the growth of food sovereignty in the Milan area, the conservation of farmsteads and rural architecture and the redevelopment of the rural landscape, the improvement of the usability of the territory and the increase in local tourism. The main products are beer, beef and pork, cereals (wheat, rice and maize), honey, medicinal herbs, fruit and vegetables. The initiatives promoted include the photographic exhibition on farming traditions 'il paesaggio siamo noi' (the landscape is us); supply chain initiatives, visits to farms for the public to learn about the landscape and agricultural production; numerous scientific initiatives on climate change, networking in agriculture and agroecology; research projects to increase biodiversity (100 steps project, social inclusion and ecology, Librarsi, Pia Biodistretto dei Navigli[7]).

[fig.2] The system of itineraries to discover biodiversity designed within the Pia Biodistretto dei navigli project. Source: Ticino Park.

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6 https://www.comune.milano.it/documents/20126/481946383/Policy-Brief-PSR-.pdf/3b69e287-5eb6-ef56-8d36-188f1f743bf0?t=1712052819710

7 https://ente.parcoticino.it/progetti/piano-integrato-darea-biodistretto-dei-navigli-operazione-7-5-01/

[fig.3] One of the explanatory panels near the farms within the Pia Biodistretto dei Navigli project. It highlights the relationships between past and present good agricultural practices in relation to increasing biodiversity, such as rotations and intra- and inter-seeding, the use of the existing irrigation system and traditional agricultural processing practices. Source: Ticino Park.

The 'Davo' - Distretto dell'Olona, was established in 2012, with 25 founding companies that later grew to 41. It recognises the Olona river as a physical, productive, historical, cultural, social, landscape and environmental resource. The lines of action within which it has moved have been the redevelopment of the territory, services for the territory and farm production improvement. Production ranges from animal husbandry to cereal cultivation to vegetables: milk, cheese, plants, eggs, fruit, cereals, potatoes. On the sales front, it has set up agreements with large-scale distribution (il Gigante); on the cultural fruition front, it has taken over the S. Elena mill and the Cistercian garden in Parabiago; in terms of environmental redevelopment, it has intervened in the Parabiago wetland area, the biopark and the lamination basins, the ecological corridor, the creation of hedges and rows of trees and the mowing of lawn areas, making these spaces suitable for city use. He has also collaborated with the world of research, particularly on the subject of agroecology.

[fig.4] The renaturalisation actions carried out by the Davo District within the Basso Olona Park. The illustrative panel at the trail entrance. Source: the author.

[fig.5] Renaturalisation of an ancient irrigation ditch with bank thickening: action carried out by the Davo District. Source: the author.

The 'Rice and Frogs' district was established in 2011 with 60 rice farms in 25 municipalities. It has created a quality rice brand with controlled DNA that guarantees the correspondence between product and label. Its aim is to increase productivity together with the use of sustainable cultivation practices and the enhancement of the history and culture of the area. The district focuses on the link between tradition (farmsteads as a cultural heritage and tourist attraction) and innovation in research (mechanisation, genetics, image and marketing - Esselunga Gdo contract). It has promoted numerous events such as the harvest festival in Cassinetta di Lugagnano, Gustariso, a gastronomic review of Dna-controlled Carnaroli rice, Milanese is Risotto, and the Riso e Rane exhibition.

[fig.6] Product communication linked to the territory and initiatives to involve the population and recall agricultural traditions in the Rice and Frogs District. Source: Rice and Frogs District[8].

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[8] https://risoerane.it/

The Dama - Distretto Adda Martesana is the most recent and was born in 2016 from the collaboration of 20 companies based on cereal growing, breeding, vegetables and processing into cheese. Its objective is the creation of a 'new season of agriculture through a new vision of the farm, closer to the environment and the consumer'. Through its website[9] it gives visibility to companies that unite under a common ideal of agriculture and has partecipated to the PIA *Mater alimenta urbes* with DAM and Municipality of Milan.

When they were set up, all the districts received start-up funding from the Region to support the drafting of the district plans; they are consortia of farms that for some marketing and promotion activities use the corporate structure[10] (e.g. for Rice and Frogs), whose ordinary management and promotion are supported by the members. for Rice and Frogs), whose ordinary management and promotion are supported by the members, while for other initiatives they contribute to projects financed under the Psr or by local foundations such as Fondazione Cariplo, in collaboration with regional bodies such as Ersaf (regional forestry body - e.g. for some green works for Expo 2015) or the Ticino Park.

Districts as educators of the new food landscape

The districts have demonstrated their ability to carry out various actions to ensure the management and improvement of the landscape from an environmental point of view, such as the planting of hedges and rows of trees, the renaturalisation of canal banks, and the management of lamination basins. These initiatives have been accomplished by a public private partnerhip with municipalities (the Dama with Liscate, the Davo with Rho and Cornaredo, the Dam with the Milan municipality) and park authorities (Dinamo with the Ticino Park).

They have promoted numerous cultural initiatives, undertaking to manage the built rural heritage, such as water mills restoration, former rural building converted into yogurt factory in cooperative form, and to keep the intangible heritage alive through the recovery of 'agricultural' traditions, such as the rice-harvesting festival, as well as promoting gastronomic events, such as the Rice and Frogs festival. The Milanese agrarian landscape, although apparently much altered, has many widespread features of the permanence of historical structures (rice fields, water meadows), in which it is only the working techniques that have been partially modified with respect to the past: the management of rotational rice paddies has been replaced by permanent rice paddies, the meadow is managed as a water meadow that is rarely submerged even in winter (except in park areas).

Analysing foodscapes diachronically provides a better understanding of the relationships of the food chain with tangible and intangible landscape values (Fontefrancesco, Zocchi, Pieroni, 2023). It is equally important to identify the permanence today of both the tangible and intangible components of the landscape, i.e. the landscape system (Scazzosi, 2018; Branduini, 2023) Some of the traditional practices are being recovered by the District farmers as they offer a high environmental quality (especially in terms of biodiversity and water management). They have count on the labour of many agricultural realities committed to offering work to social categories in difficulty (re-employment, physical and mental disabilities, rehabilitation of former drug addicts and prisoners).

The city of Milan and the municipalities in the Milan area have also expressed an increasing demand for short supply chains, in search of distinctive, quality-certified productions: the districts have responded mainly with traditional productions and certified organic producers. In this sense, the branding of local identity linked to the landscape appears to be the way to recognise the quality of the landscape itself, focusing not only on the uniqueness of the productions (such as DNA-certified rice), but on the management of a landscape with a high environmental quality and a strong social role. They could have a dedicated, branded and recognisable space within the large-scale retail outlets.

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[9] https://distrettoagricoloaddamartesana.it/

[10] The members' meeting appoints a president and a technical director.

The districts, through the catalysing action of individual farmer initiatives, have offered greater visibility and recognition to the educational and cultural role of agriculture *vis-à-vis* the city, promoting a model of healthy and sustainable development. The coordinated and aggregating action of the districts was and is in this sense fundamental to overcome the often individualistic way in which farms work. The formative and educational role of food communities is an important factor in changing the ethical approach to food (Butelli, Fanfani, 2023), enabling an increase in awareness among producers, increasing consumer attention to the effects of consuming healthy, sustainably produced and low-impact products, and ultimately also enabling the preservation of a healthy landscape.

The presence of a strong institutional will enshrined in various shared programming tools: and of a dynamic framework of public and private actors also emerged: based on the common agricultural agreement, the integrated plan proposed by two district included the institution as a partner (PIA Dinamo e DAM). The drive of private entrepreneurs was significant, while the public played a cohesive and accompanying role, as is often the case in food communities (Butelli, Fanfani, 2023). Some innovative poles (public companies, innovative large-scale distribution) can experiment with new supply chains, and the presence of new generations on farms could favour this combination.

Conclusions

Food districts are already a widespread reality in Italy, and even Fondazione Cariplo, a Milan-based banking foundation that supports territorial projects of an environmental, social and cultural nature, has recognised their potential to such an extent that it has promoted a food district school in 2023/24[11].

The Milanese experience shows that even in a highly industrialised agri-urban area, food districts are food landscape laboratories and can help preserve the tangible permanence of the agrarian landscape and transmit its intangible values. The recovery of rural buildings and hydraulic artefacts goes hand in hand with the renaturalisation of watercourses and wetlands; traditional agricultural practices, such as winter submergence, alternating tree and herb crops and inter-seeding favour biodiversity. The recovery of artefacts and practices is told to the public and celebrated at festive occasions, consolidating the relationship between farmers and improving that with citizens. Institutions actively participate, reinforce and catalyse the process of territorial cohesion.

Districts thus contribute to enhancing human capital: they strengthen the relationships of knowledge exchange between farmers and collaboration in commercial and recreational activities organised for the public; they bring consumers and producers closer together and contribute to re-territorialising food (Butelli, Fanfani, 2023), bringing it back to a local and proximity dimension. This dimension of proximity also regenerates human capital in the relationships of trust established between the actors in the process, reinforcing cohesion and triggering new processes of heritage and landscape regeneration and redevelopment (Branduini, 2024).

Bibliography

Branduini, P. (2024) 'Care Education in the Circular Economy. The Friends of the Marcite Heritage Community for the Dynamic and Participatory Conservation of an Agrarian Landscape'. Il Capitale Culturale: Studies on the Value of Cultural Heritage, in press.

Branduini P. (2023) 'Ancient Knowledge of Irrigation for a Sustainable City: Insight on Milan Water Meadows', Conservation and Management of Archaeological Sites, doi: 10.1080/13505033.2023.2293344

---

[11] https://www.fondazionecariplo.it/static/upload/la-/la-scuola-dei-distretti-del-cibo.pdf

Butelli E., Fanfani D. (2023) 'Il cibo come commons nella dimensione territoriale. Il ruolo delle Comunità del Cibo nel caso toscano', Re I Cibo Rivista della Rete Italiana Politiche Locali del Cibo Vol.2 n.1:58-81

Fontefrancesco, M.F., Zocchi, D.M., Pieroni, A. (2023) 'The Intersections between food and cultural landscape: insights from three mountain case studies. Land 2023,12,676. doi:10.3390/land12030676

Scazzosi, L. (2018). "Landscapes as Systems of Tangible and Intangible Relationships. Small Theoretical and Methodological Introduction to Read and Evaluate Rural Landscape as Heritage" in Rosina E. and Scazzosi L. (Eds) The Conservation and Enhancement of Built and Landscape Heritage. A New Life for the Ghost Village of Mondonico on Lake Como, Milan: PoliScript pp. 19–40.

Circular food initiatives and Continuous Productive Urban Landscapes - a critical reflection on the potential of circular initiatives for systemic change in city regions

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Circular food initiatives and Continuous Productive Urban Landscapes - A critical reflection on the potential of circular initiatives for systemic change in city regions

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The circular economy has gained traction as a solution to transform our food production and consumption system from a linear to a sustainable system. While such initiatives are effective in providing local ground level solutions, they do not always spread across larger geographical spaces, address structural inequalities and contribute to place-making. In this research, we examine the role of circular food initiatives in bringing transformative change in the context of place-making and a productive green infrastructure. We address this question in a front runner city, Brighton and Hove, located in the southeast of England. We present a preliminary analysis of four exemplar cases showcasing top-down and bottom-up food initiatives with a common goal to transition towards a sustainable and circular food system. Our analysis shows that while individually they contributed to positive social, environmental and economic impacts, the lack of collaborative opportunities between different initiatives within a city region is halting the scaling of circular initiatives. Nevertheless, the elements of place-making existed in all cases demonstrating system level impacts.

Key words: Circular Food Initiatives, Scaling, Continuous Productive Urban Landscapes, Placemaking.

Introduction

Our food production and consumption system is highly unsustainable following the linear-system of 'take-make-dispose' (Borrello et al., 2016). This system is designed in a way in which food travels in one direction, from production and processing to consumption and disposal, using large amounts of resources and creating large amounts of waste (EMF, 2019). Hence, there have been calls for innovative solutions to rethink and design the food systems (Pasucci 2020). Researchers have argued about the role of the circular economy (CE) as a solution to address food system challenges, either by using the principles of industrial economy to redesign linear food systems or focusing on agroecological principles and community practices to pursue regenerative food systems (Pascucci, 2020). Adopting the CE principles, many circular food initiatives has emerged at city level, such as community agriculture, urban forest gardens, community compost, and surplus food redistribution (Pascucci, 2020). While these local-level initiatives are efective in providing solutions to local challenges, they can not address structural inequalities affecting the food systems (Sonnino and Milbourne, 2022). Similary, it remains unclear how they interact with wider city level systems and contexts to support circular food economies. This is crucial because food systems in relation to localised production and consumption require the consideration of space for food places, such as urban agriculture, food hubs, markets etc. Allocating space for these activities, which in themselves are relatively low cost compared to buildings, remains a challenge in most cities operating within market economies due to the high cost of land. This indicates that food system is 'place-based' and 'community oriented' (Marsden, 2013), and requires consideration of place-based knowledge and practices of diverse actors. However, how this is reflected in the context of circular food initiatives at a city level and how circular food initiatives contribute to placemaking remains unclear. In this research, we aim to fill this gap by addressing the question - how can circular food initiatives be scaled for transformative change in the context of placemaking and a productive green infrastructure?

Literature and Theory

The link between food related placemaking and scaling is explored because while numerous isolated place based circular food initiatives exist the potential for coherent and physically connected food landscapes such as advocated by the Continuous Productive Urban Lansdcape (CPUL) concept have not yet been achieved. Furthermore place-based community initiatives are typically heterogeneous and diverse, which makes scaling difficult.

We use placemaking as an idea that can bridge interests in scaling the infrastructure for circular food initiatives and the positive contributions that these can make to the design of cities. Placemaking has been reviewed as a "nebulous" concept, (Ellery, Ellery, Borkowsky, 2021) and in the British Academy's "where we live next" programme for its limited use in relation to food. We use the term placemaking to capture the emotional attachment that people develop towards a physical space, and also because it is one that broadly can be grasped by diverse groups of people. In this context we include urban green infrastructure (landscapes), built infrastructure (for example shops) and activities like composting which nurture landscape as relevant to placemaking.

Methodology

Research context

This preliminary research uses a case study approach and draws on exemplar cases (Eisenhardt and Graebner, 2007) in the circular economy at a city level. The research is located in Brighton and Hove, on the south coast of England. Given that food systems have impacts at a city level (EMF, 2019), we have chosen this city for three reasons. First, the local authority has included circular economy since 2018 within its eocnomic developement policy (BHCC, 2018). Second, the city is a 'front runner' in the context of food systems winning a gold award in sustainable food places. Third, a local food avocacy organisation, the Brighton and Hove Food Partnership, is currently developing a second food strategy for the city, which provides a timely opportunity to evaluate local food initiatives from a place-making perspective and consider the wider impacts on food systems.

Case study selection

In this pilot, we examine four circular food initiatives that directly or indirectly contribute to physical place making, i.e. they have a spatial impact, and have a common goal to transition towards a sustainable and circular food system. These inlcude – The Compost Club, The Brighton Food Factory, A Planning Advisory Note and The Moulsecoomb Forest Garden. The selection of these cases was infromed by three criteria – i) established with a variety of top down and bottom-up approaches; ii) focused on different aspects within the food supply chain (e.g. farming/food growing, distribution, surplus, and composting); and iii) demonstrated a level of success. By success, we meant a measurable impact, either evidenced by the number of projects initiated (Compost Club), measurable impact during the Covid Pandemic, with potential as a demonstration project (Brighton Food Factory), a measurable impact on spatial development in the city (Planning Advisory Note) and long term establishment with consistent impact (Moulsecoomb Forest Garden).

Data collection

The data for the study comes from multiple sources, including semi-structured interviews with the founders and key knowledgeable informants, visual graphics of the cases with reference to place, and secondary data including reports, websites, news and media. In presenting the case, we provide a brief discussion of the activities, the current status in terms of scaling or operations, the challenges they have faced and their role in place-making.

Case description and analysis

The Compost Club

The compost club is a social enterprise with the aim to regenerate soil, reduce food waste emissions and educate communities. The club was founded during the COVID pandemic and started with collecting food waste from residents and businesses that would have otherwise gone to landfill or incineration. From the intercepted food waste, compost is produced that is biologically diverse and rich in microorganisms, which is used to regenerate soil. Since its foundation, the club has created a community of composters in Brighton, Hove, Lewes, Lancing and surrounding areas.The business model operates through membership, sale of compost, and education activities. Members pay a fee for a subscription for their food waste to be collected and turned into compost. The produced compost is sold to members and market gardens. With regards to education activities, the revenue comes from the founder's consultant role in establishing a compost site (e.g. schools, housing sites, communities) along with education and training on how to make composting so that the site is self-run by a trained individual. The founder stresses, *"It's kind of trying to think of this as a whole system's approach, the idea was never to do more than one little club, but we are growing, there is a demand, and we can have multiple human scale sites which can create a green meaningful job for someone on each site."*

Despite the vision that it can scale in different locations and has been replicated in other sites and cities, the founder also sees scaling as a challenge to regenerate soil on a large scale. The main challenge comes from funding as currently, only two people are working at the Compost club. From the perspective of the founder, soil regeneration is a systems approach where it is about ensuring future food security, producing good quality and quantity of food using compost rich in micro-organism diversity, supporting farmers in sustainable land management, and creating jobs for those involved in composting within an area or a farm. The focus on regeneration of sites (e.g. school, community garden), farms and large scale agricultural land links directly to placemaking where cities and rural areas produce their own compost using their own waste resources to regenreate soil.

The Brighton Food Factory

The Brighton Food Factory started during COVID-19 pandemic to act as a Food Hub or wholesaler to mobilise the surplus food from hospitality, farms, and small retailers for emergency food crisis as a result of closure. The success of surplus food mobilisation led to the foundation of the Brighton Food Factory as a social enterprise with the aim to operate as a food hub to develop a local food system, where food produced in the city and nearby areas was consumed within the city, increasing the accessibility for communities, giving local producers a route to local markets and receive a fair price, and contribute to the sustainability of food supply system within the city region.The founder had a prior experince of running a community food initiative, a local pub and shared his experience of the first day when they opened it to communities, "*we were a bit worried about it at first when we did our celebratory day serving hog roast as the pub was not used by local communities despite serving cheap food. But, hundreds of people turned up for free food and free entertainment and at that moment, I felt that the pub acted as a community hub bridging the gap between food, food poverty, and communities coming together for cooking and eating food.*" The experience at the pub led to the start of the Brighton Food Factory, initially with the idea of addressing food inequality through the provision of cheap readymade meals made from the surplus. However, when COVID-19 happened they changed their initial plan to become a food wholesaler. They started travelling to different farms to source food, as the farms had lost all their commercial businesses, and the farms needed to keep going. With positive impact and appreciation from wider communities, it continued acting as a Food hub/Wholesaler, however, it faced financial and logistical challenges and closed in 2023. Despite failing as a social enterprise, it provided

an experimentation of how a food hub in a city might operate connecting local food to local consumers and what logistics/infrasstructures are required. Currently, there are ongoing activities to establish a food hub and develop a supporting infrastructure.

The Brighton Food Factory touches upon a number of issues regarding a community circular food initiative that aims to improve the accessibility of local, nutritious food and also provide a fair price to farmers. Given the hub acting as the main connecting link between producers, consumers and hospitality, the case provides evidence of a systems approach in terms of the local food system and placemaking where food is produced and consumed within the city.

Planning Advisory Note 06

With the aim of increasing the number of food growing sites in the city, in 2011 the city adopted the first Planning Advisory Note 06 (PAN 06) in the UK to encourage the inclusion of food-growing spaces in new urban developments, it applies 'to new build commercial, residential and mixed-use developments, and if applicable, to conversions (Bohn, Viljoen, 2022). Titled the *Planning Advisory Note (PAN 06) on Food Growing and Development,* it came about through close cooperation between Brighton & Hove's sustainability officers and the Brighton & Hove Food Partnership, which led the drafting of the document, underpinned by consultation with a range of external parties, including Viljoen one of the authors of this paper. It was expanded and readopted in 2020 and includes wide ranging set of precedents and principles to assist developers in understanding the requirements and opportunities arising from urban food growing initiatives (BHCC, 2020). A systematic review of all planning applications in Brighton and Hove between the 1st September 2011 and 27th July 2019, by Penny, recorded that almost 22% of planning applications had some provision for food growing spaces, although about one third of these were subsequently withdrawn (Bohn, Viljoen, 2022).

As part of our current research (2024) we have revisited three projects documented in Penny's review: Robert Lodge, a development of three-story apartment buildings built around a courtyard to the East of Brighton, Brooke Mead, a residential care scheme in the centre of Brighton and the Albion Community Garden. We can report that these all continue much as in 2019, although the amount of food produced is negligible, or symbolic. By contrast ornamental planting is frequently thriving.

The Moulsecoomb Forest Garden

This project has been running since 1994 and was referenced in setting out the principles behind the CPUL concept. The project is located in an area of Brighton and Hove with high levels deprivation and few communal facilities. Its aim is to work with a diverse range of people and age groups, including those who struggle within mainstream education. Organic food growing and associated social activities of gathering, eating together and socialising provide the framework for the project's work and in 2005 it became a charity. Bohn and Viljoen's interest in the project was its many spatial and usage characteristics that resulted in a "overlay" onto the original rectilinear allotment plan of gathering and social spaces that formed a new network of spaces conceptually very close to those kinds of spaces envisaged within the CPUL concept that operate adjacent to and within productive urban landscapes.

In 2024 the authors of this paper revisited the Moulsecoomb Forest Garden to interview its founder Warren Carter and to review a measured survey of the site undertaken by Viljoen in 2002. The interviews revealed that this is a project aiming to consolidate its place in the community and is focused on securing its long-term future as founding members plan their eventual retirement; it is not focussed on scaling by replication elsewhere.

Usage patterns have evolved over time and the overlay of gathering and activity spaces has significantly consolidated and developed in the 22 years following the 2002 survey. Growing

infrastructure such as polly-tunnels, composting bins, and tool stores have been developed and extended as have gathering spaces for meeting, eating and cooking and an off grid solar powered strawbale eco cabin has been constructed as a gathering space.

Discussion and Implications

The case studies provide evidence of different approached to and types of scaling. In their narrative and description of activities, there are references to placemaking with emphasis on the wider systems (e.g. individual gardens, to the community to large farmlands), landscape (e.g. productive urban and social landscapes) and city region (e.g. local food, local producers, disadvantageous groups, involvement of school children in nature) [see Table 1]. The success of the initiatives has opened up opportunities to scale; however, unless the scaling is funded by public authorities or supported by organisations, it is challenging due to the lack of finance and human capital requirements and the city's context and infrastructure. The city context and infrastructure also highlights the challenges of place-based scaling, i.e. do the sucessful case in one place fit within the new contexts with particular characteristics and infrastructure. For instance, to establish a food hub, a larger space and infrastructure is required to collect food from producers and distribute to food retailers (farm shops or local butchers) and hospitality (cafe and restaurants). From a design perspective, the location of the food hub is important in order to reduce food miles as well as food waste. In addition, costs are also important to rent such a large space. This directly points to the need to consider design and planning in the discussion of food systems, for not only placemaking but also scaling and creating a circular food systems.

Initiatives	Scaling	Placemaking	Systems perspectives
The compost club	Replicated on other sites where the founder provided a demonstration and set up a system. However, the enterprise has not scaled itself.	Compost in respective sites to regenerate soil and farmland.	A clear connection between soil regeneration, food production and a system of employment generation.
The Brighton food factory	The enterprise closed after 3 years of operation.	Elements of local food, local consumption and supporting local farmers.	Local food system that produces and consumes local food.
Planning advisory note	Replicating within the city via planning applications. Indirectly in policy supporting UA, such as in the New London Plan.	Explicitly about place making.	Explicitly about integrating food into the urban metabolism.
Moulsecoomb forest garden	The project aim is for longevity and deepening connections within its neighbourhood and not on replication elsewhere.	In a specific location that used to be allotments, engaging different social groups and close connection with local schools. It is recognised as a unique place.	Demonstrates whole life food systems based on organic growing principles including no waste, composting, a composting WC, cooking and food facilities, social and educational roles.

Table 1: Initiatives in the context of scaling, place-making and systems

Despite the scaling challenges, within their place, all the initiatives have been able to embed social and environmental factors in their activities. Our initial desk review and interaction with key informants of these cases demonstrated the existence of similar initiatives within the city. However, we also observed a lack of connection between these initiatives missing the opportunities to work together in a joined-up approach. Despite producing social and environmental impacts, the economic impacts through revenue generation need further consideration as been observed in the case of the Brighton Food Factory and Moulsecoomb Forest Garden. While the cases are exemplary, they are in danger of being closed or remaining small without any effect on bringing transformative change. Nevertheless, initiatives like these,

both bottom-up and top-down, although some operate for a short period (The Brighton Food Factory), are small in scale (Mouselsecoomb Forest Garden), focused in distinctive spaces (Planning Advisory), and take different shapes (The Compost Club) they are relevant to showcase what is possible to the transition the linear food systems into the circular food systems.

Our findings have implications for scaling circular food initiatives for transformative change. Sonnino and Milbourne (2022) argue that individual food initiatives cannot address the structural inequalities affecting the food system unless they manage to bring together different spheres, domains and scales. Our findings confirm that the individual initiatives despite being effective in producing social and environmental outcomes, they cannot support transformative change and to do that joining different initiatives is essential. We wish to further investigate these linkages as potential leverage points for scaling.

Bibliography

BHCC Brighton and Hove City Council (2020) *Planning Advisory Note PAN 06 Food Growing and Development: Updated September 2020,* Brighton: Brighton and Hove City Council. Available online:https://www.brighton-hove.gov.uk/sites/default/files/2020-09/FINAL%20Food%20PAN%202020.pdf (accessed Oct 2020).

BHCC Brighton and Hove City Council (2018) Productive Inclusive Transformation. An Economic Strategy for Brighton and Hove 2018 to 2023. https://www.brighton-hove.gov.uk/sites/default/files/migrated/article/inline/economic-strategy.pdf

Bohn, K. & Viljoen, A., 20 Oct 2022, *Routledge Handbook of Urban Food Governance.* Moragues-Faus, A., Clark, J. K., Battersby, J. & Davies, A. (eds.). 1 ed. London: Routledge, p. 457-470 14 p.

Borrello, M., Lombardi, A., Pascucci, S., & Cembalo, L. (2016). The seven challenges for transitioning into a bio-based circular economy in the Agri-food sector. *Recent patents on food, nutrition & agriculture*, *8*(1), 39-47.

Eisenhardt, K. M., & Graebner, M. E. (2007). Theory Building From Cases: Opportunities And Challenges. *Academy of Management Journal*, *50*(1), 25-32. https://doi.org/10.5465/amj.2007.24160888

EMF Ellen MacArthur Foundation (2019) Cities and Circular Economy for Food. https://emf.thirdlight.com/file/24/K6LOnIrKMZq-8vK6HoTK6iyBra/Cities%20and%20circular%20economy%20for%20food.pdf

Ellery, P.J., Ellery, J. & Borkowsky, M. (2021) Toward a Theoretical Understanding of Placemaking. *Int. Journal of Com. WB* **4**, 55–76 (2021). https://doi.org/10.1007/s42413-020-00078-3

Marsden, T. (2013). Sustainable place-making for sustainability science: The contested case of agri-food and urban–rural relations. Sustainability Science, 8 (2), 213–226.

Pascucci (2020). Circular Food Economies. In Duncan, J., Carolan, M., and Wiskerke, S.C. (eds.) Routledge Handbook of Sustainable and Regenerative Food Systems. Routledge.

Sonnino, R. & Milbourne, P. (2022) Food system transformation: a progressive place-based approach, Local Environment, 27:7, 915-926.

Swagemakers, P., Jongerden, J. and Wiskerke, J.S.C. (2014) 'Urban green infrastructures in Europe: new architectural orientations for finding a way out of the dead-end road of industrialized modernity', *Spanish Journal of Rural Development*, 5:1,1-6.

Viljoen, A. and Bohn, K. (Eds.) (2014) *Second Nature Urban Agriculture: Designing Productive Cities*. Oxford: Routledge.

New Agricultural Parks regenerating city-region landscapes

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New Agricultural Parks regenerating city-region landscapes

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A new concept for Agricultural Parks (APs) can provide a powerful planning strategy to cut greenhouse emissions in addition to providing a wide range of social, health, economic, and environmental benefits. It is evident from current public debate that there is a need to transform the food system to enhance food security, food justice, food democracy and fair income for producers. At the same time there is a need to reduce food waste and negative environmental impact while also adapting to climate changes. However, the transition is slow. International politics, approaches and institutes are still sectoral, influenced by corporate lobbyists, while local initiatives are scattered. IPES-Food proposed a Long Food Movement where niche initiatives are empowered to contribute to transformation. For this the key field of play for transformation can be the local level and particularly, as a system of -sometimes long lasting - embedded socio-ecological proximity relationships- the city-region. Cities have fairly independent strategies, often determine the use of public land and can link local producers and consumers. Sectoral silos within city government can also be more easily overcome, especially if food policies are connected to climate actions.

APs could be part of a city-region strategy for supporting agriculture and farmers. It does this by supporting transition toward more equitable and regenerative farming models by creating new distribution methods and developing local food hubs. It can also raise the profile of the farming profession and its connection to the city, as well as diversifying livelihoods and recovering urban/rural relationships by transferring towards agroecology. APs achieve this by acting as incubators for new ways of food cultivation, processing, and distribution. The approach allows integration of large areas, often with diverse ownership and legal status, into a single organisational entity. Although there is a longstanding interest in APs in some parts of Europe, it remains a little-known planning approach. By linking an analysis of existing APs with concepts for climate action, well-being and sustainable food systems, this paper aims to draft a model for the new agricultural park as an integral strategy and deepens the understanding of the benefits to people.

Keywords: Agroecology, Food Systems, Food networks.

Introduction

A new concept for Agricultural Parks (APs) can provide a powerful planning strategy to cut greenhouse emissions in addition to providing a wide range of social, health, economic, and environmental benefits. It is evident from current public debate that there is a need to transform the food system to enhance food security, food justice, food democracy and fair income for producers. At the same time there is a need to reduce food waste and negative environmental impact while also adapting to climate changes. However, the transition is slow. International and national politics are still sectoral, influenced by corporate lobbyists and local initiatives are scattered. IPES-Food proposed a Long Food Movement where niche initiatives are empowered to contribute to transformation (IPES-Food, 2021). For this the key field of play for transformation can be the local level and particularly, as a system of -sometimes long lasting - embedded socio-ecological proximity relationships- the city-region. Cities have independent strategies, often determine the use of public land and can link local producers and consumers while possibly setting and implementing intertwined social, environmental and economic policies. Indeed, sectoral silos within city government can also be more easily overcome, especially if food policies are connected to climate actions. In "From Plate to Planet IPES-Food" (2023) states: Local governments are spearheading action to cut greenhouse gas

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emissions. It presents seven ways local governments are harnessing food system transformation to combat climate change. These include supporting sustainable farming and short-supply chains, ensuring that healthy, sustainable diets are available, accessible, and desirable.

This article explores creating a framework for community life in cities through new APs, envisioned as communal assets. The concept draws on the heritage of cooperatives and garden cities, emphasizing decommodification in agroecological practices as acts of care and resistance (Popławska, 2020). These practices occur amid commons enclosures and rural de-agrarianisation (Sadura et al, 2017, Popławska, 2020). In this context they could strengthen communities within the food sovereignty movement.

Revitalising the city to foster communal interaction is central to the idea of common goods. We must redefine the social nature of cities as their core foundation and a critical condition for communal life (Marzec, 2010). Our Agripark proposal, grounded in agroecology, promotes interactions among urban residents and food producers, creating spaces for exchange and collective education. Understanding agricultural practices and coexisting with the natural environment fosters appreciation for farmers' work. This shared experience and respect for food production and the reproduction of life establish the foundation for communal life among diverse social groups and the living environment.

APs can provide powerful mechanisms for supporting agri-food system transformation, and for this it is necessary that additional aims, functions, and regulations are added to the concept. This would be the New Agripark approach. It represents a multifaceted strategy for sustainable agriculture that integrates key components: food production, environmental regeneration, a learning environment, research, and social integration. This holistic model aims to create a complementary relationship between agriculture and the broader community, fostering a sustainable and inclusive food system.

To develop a base for a new concept a reference study on various forms of APs was conducted. We included comparable concepts such as the Cultural Landscape Parks, the concept of Agroecological Parks which is part of the project Urbanising in Place and the Metropolitan Agro-Net proposed by Hoyos Rojas (2022).

We compared this to the goals and concepts for new parks that are studied in the framework living labs of the AESOP4Food Erasmus+ project.

Typologies of Agricultural Parks

Existing Agricultural Parks

There is no consistency in how agricultural parks are labelled, the names vary from Agripark, Agropark, Agrifood-Park, Agricultural Park. This paper uses the latter term. Agricultural Parks are mostly near the urban fabric and, accordingly, they are conceived and designed in terms of multifunctionality, that accommodate and aim to integrate medium sized and small farms, public areas and natural habitats and other public interest services mainly relating to farming activity. They allow small farmers access to secure land and local markets; they provide fresh food, and are an educational, environmental, and aesthetic amenity for nearby communities. Whereas the European Socio Economic Committee (EESC, 2004) states the key importance to protect and enhance a multipurpose peri urban agriculture, the COST action Urban Agriculture Europe presents a stronger link to the needs of the city and states that agricultural parks represent a specific component of Urban Agriculture (UA) that plays a key role in two global challenges: urbanisation and food security. UA can provide an important contribution to sustainable, resilient urban development and the creation and maintenance of multifunctional urban landscapes (Lohrberg et al., 2016). Fanfani (2019) describes the genesis, evolution and basic features of the Peri-urban Agricultural Park Model

presenting an analysis of APs in Spain, Italy, and France. He concludes that APs can represent an integrative and suitable planning and design tool that deals with the growing complexity of peri-urban open space governance issues and help to overcome the distinctive separation between urban and rural domains. The strength lies in the definition of a specific territory that is governed by a set of rules and regulations while at the same time it is guided by a locally shared vision and a strategy. A key to success is a creation process that combines a bottom-up approach that is embedded in a public authority framework and stable, pro-active partnerships of producers, citizens, civil society, and public authorities (Fanfani 2019). Drawing on evidence from Spanish cases, this is a relevant factor for the establishment and implementation of APs and refers to its multipurpose nature that increasingly combines goals for farmland protection along with creation of Agro-Food-Networks and environmental enhancement (Paül and Zazo Moratalla, 2022). Recent developments are brought forward by Hoyos Rojas (2022), such as the development of the Portuguese Espaço Rústico para Afife Carreço e Areosa with collaboration between actors, providing infrastructure and innovation for agriculture, protecting and enhancing landscape values, and diversifying the use of amenities. APs accommodate various needs and functions by an integrated landscape approach. Current goals of various parks are presented in Scheme 1.

Scheme 1: overview of current aims of Agricultural Parks		
Aspect		Aims
governance	land use	Regain control of land use
		Counter urban sprawl
	organisation of governance	Including stakeholders at multi levels.
		Co-production by actors (producers, consumers, planners, civil servants), co-creation of strategies.
economy	income	Liveable / fair income for farmers
		Workplaces for production, processing, environmental protection, education, etcetera.
	land use	Access to land for (new) farmers
	stability	Promoting innovation / diversification for a sustainable production model
	infrastructure	Common infrastructure for machinery and facilities for sales, storage, composting.
	sales	Connection to urban markets / short chains
social	well-being	Providing opportunities for leisure, recreation, nature experience, mainly in the form of routes for walking, cycling.
	food security	Providing fresh, healthy food
environment	territorial assets	Stewardship of natural resources: farmland, cultural heritage, nature areas
	ecosystem services	Climate mitigation, city cooling, water retention, clean water, healthy soils, clean air, improving biodiversity, landscape improvement.

Recent developments

Hoyos Rojas (2022) explores and deepens the AP concept on a metropolitan scale adding a network approach to it. The concept of a Metropolitan AgroNet integrates the objectives of the APs and a network that allows flows between multiple AP areas and actors in the food system. The net facilitates the exchange of information, experiences, tools, techniques, and material that improve the metropolitan food system. The networks take a model for organising the relation between the different types of actors. The network can gather public and private actors, such as local authorities, regional institutions, universities, research centres, NGOs, civil society organisations, farmers, landowners, etcetera. The network highlighted the role of agreements and a shared responsibilities model. The metropolitan network might foster a governance system based on partnerships that enforce the administrative support and the active collaboration of public officials and other informal participation related to specific projects (Hoyos Rojas, 2022, p 30-31).

In the project "Urbanising in place" the concept of the AP was further developed as an Agroecological park (Dehaene & Renting, 2024). The building block of the Agroecological Park articulates the relation between objectives for environmental goals, development of

green infrastructure and agroecological farming. It builds on the notion of the AP by embracing the use of territorial instruments in bringing about transition in agricultural models. It creates a dedicated area with special rules and regulations (i.e. the ban of pesticides), specific forms of management (i.e. installation and maintenance of shared infrastructure), and the visible implementation of distinctive farming practices (no tilling, no bare soils, elaborate crop rotation systems, companion planting and aspects of agroforestry, etcetera). It aims to regain control of land-use; preserve and protect territorial assets; provide infrastructure for farmers and producers; and function as an incubator for specific farming models. It fosters co-production of actors, both producers, consumers, and planners.

Related land-use planning concepts

Whereas the AP label encompasses experiences not always consistent between them (Paül, Zazo Moratalla 2022). There are many projects and models that have aims which are comparable to those of APs but are not labelled as such. Among them the Biovallée the Drôme valley in France and the Markemodel in the Netherlands.

Biovallée Drôme Valley

The initiative (https://biovallee.net/) aims to establish the Drôme valley as a regional leader in the management and valuation of natural resources (Bui, 2015). Its objectives in 2009 included: (1) Develop high-level training opportunities in the field of sustainable development, (2) Reduce the territory's energy consumption and fully supply it by locally-generated renewable energy by 2040, (3) Convert 50% of farmers and agricultural surface area to organic agriculture by 2020, (4) Supply 80% of the procurement of institutional catering using organic or regional products, (5) Change urban planning guidelines such that after 2020 no more agricultural land will be diverted to urbanisation, (6) Halve the amount of waste brought to waste treatment plans by 2020.

The Drôme Valley's transition provides insights into how norms can be shifted over time. Ongoing interaction between mainstream and alternative actors has allowed for rapid upscaling, access to resources, and legitimisation of the transition process. The transition has also been advanced through various forms of institutionalisation and a well-planned governance process. The main bodies are the general assembly of members of the association, which validates the strategic goals and starting renewals, the advisory board for the strategy and outlook and a staff office with paid employees.

Markemodel, the East Netherlands

The Markemodel is a pilot in the framework of the Common Agricultural Policy (CAP), and it not only focuses on the quality of agricultural nature and landscapes, but also on soil, water and air. It intends to be an answer to the shortcomings of the current economic and social model. A group of 35 farmers in Winterswijk and 't Klooster near Zelhem are collaborating within the framework of the model. The Markemodel is an approach in which farmers and steering parties jointly arrive at a regional, integral set of quality goals and the associated rewards for future-proof agriculture. The pilot project investigated how the rules of the European goals (Nitrate Directive, Water Framework Directive, Climate Agreement) and goals in the field of nature, landscape and biodiversity fit into a bottom-up governance model. It focuses on quality objectives and the development of an effective remuneration model for farmers. It aims to reduce implementation costs and increase the effectiveness of achieving goals for integrated environmental quality. It should help to build motivation, a sense of responsibility for sustainable development and to further the business interests of the farmers for achieving the quality objectives.

The strength of the Markemodel approach is its inclusiveness of diverse types of farms and farmers. Moreover, it develops common aims and values in dialogue. This empowers the farmers, builds capacity, and fosters collaboration. Working with Key Performance Indicators simplifies their administration and helps them to track environmental targets. A weakness is the small amount of financial remuneration. In the approach consumers, local retail and food processing industry are not included. Integrating these could help to build a sustainable local food system. Because the partnership consists of individual farms, the area is not sufficiently covered, which is important for an integral environment in the region.

Discussing the scope of the New Agricultural Park

Although the French and Dutch cases are not defined as APs, they show that it is essential that an AP is managed by a specific governance body, which sets strategies, triggers actions and monitors results through a collaboration of stakeholders, inhabitants, and involved associations. A set of sustainability goals (e.g. for agroecological production, renewable energy, social inclusion) needs to be defined, while participating actors are not fully bound by regulations but motivated by supportive infrastructure, benefits and self-government. Related to this double strategic and governance dimension, drawing on experiences and practices assessment (Zazo Moratalla, Yacaman Ochoa, 2015; Zazo Moratalla 2018; Yacaman Ochoa, 2018), while, still according to Paül, Zazo Moratalla (2022) mandatory planning rules and tools for farmland protection have shown as not being key in achieving expected results.

The New Agricultural Park model can build on the features of existing APs and comparable projects for sustainable development of rural areas with agricultural production. It can be extended by the concept of a federative network model, which connects different areas with hubs in the city. It also aims to recover and deepen the mutual regenerative and metabolic relationship between urban and agro-urban/rural domains through the integration of an agroecological approach on a socio-ecological basis.

A new model should include active land-use protection strategies; enabling logistics within the network; integration of key functions in Food Hubs; facilitating farmer cooperation and learning potential; the promotion of place tailored farming; and innovative technologies.

A New Agricultural Park model

The model consists of a network of agricultural parks and a concept for the organisation and structure of the separate APs.

A city-region network of APs

To deepen the concept of the City-Region Food Systems (CRFS) (Blay-Palmer et Al. 2016) in our vision the city region develops and organises a network of agricultural parks. Each park involves some specialisation of crops and produce depending on the existing farming tradition, landscape character, soil and water conditions. The size of the parks varies with some parks being directly connected to the city, while others are further on the periphery. A city region food strategy is conceived as relying on this network and sets aims for developing the whole system for improving the social, environmental and economic sustainability. It does this according to the 10 principles of agroecology: which are: diversity; co-creation of knowledge; synergies; efficiency; recycling; resilience; human and social values; culture and food traditions; responsible governance; and circular and solidarity economy (Barrios et al, 2020). A city-region food council coordinates the implementation of the food strategy in such a way that the separate councils of each park and the farmers and producers can contribute, at their own pace and manner, to the overall sustainability and provision of food. Representatives of each park have a seat in the city region food council.
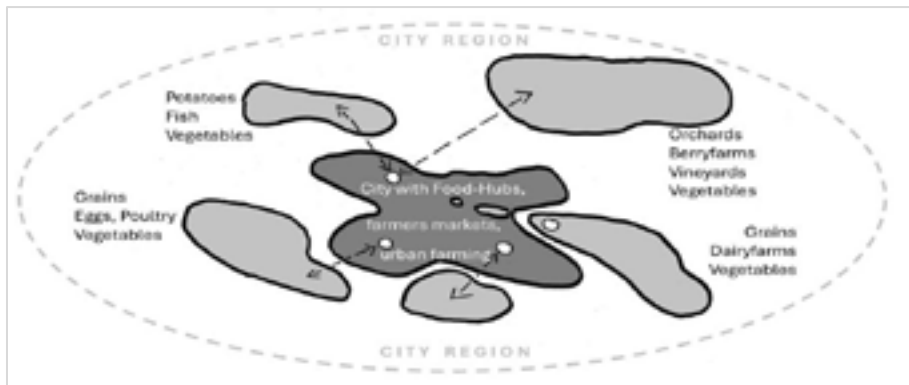
Fig 1. City region with a network of agricultural parks which provide various types of crops and products depending on the landscape type, soil and farm structure. (elaborated by the authors)

Model of the New Agricultural Park

The New Agricultural Park is not only a defined geographic area. It includes a democratic governance organisation that connects the producers and consumers to civic society and local authorities. The organisation includes a steering committee, the park council and a staff office. The steering committee has representatives from the park council, local authorities and relevant NGOs. It develops the strategy and guides the office staff. The park council consists of representatives of the farmers, producers, processors, NGOs related to nature protection, recreational representatives, consumers, and public bodies. The council makes the main decisions, in its general assembly, on the vision, aims and strategy and mid-term working plans. The staff office organises activities and prepares the strategic, tactical, and operational activities and policies.

The vision and aims of the park centre on agroecological production and nature-inclusive farming. Individual farmers are not forced into regulations for this but can adapt their methods and set their farm business plans to improve their sustainable production, for soil health, water management, green-blue veining, composting, etcetera.

The New Agricultural Park model aims to improve soil health and water management, foster biodiversity, and cultural identity, and provide infrastructure for leisure and recreation. Farmers and producers are supported by infrastructure such as a composting plant, storage capacity for crops and processed food, and machinery that can be used by the members of the park organisation. New farmers can make use of a farmers' incubator space that provides vocational training in agroecological methods, organises traineeships at local farms and makes experimental plots available.

The model supports the links between the urban population by developing a food hub in the urban area as a public space for selling, marketing, and education. It's organisation also provides links to existing or newly installed farmers' markets. Consumers can support farmers by the creation of community supported agriculture and co-operations through common land ownership for food production. Urban dwellers can regain their connection with food production in allotment gardens, community orchards, community food forests, community gardens and "pick your own" farms.

Governance / Management / Marketing / Communication

Steering committee

Staff office

Park council

Legal framework
Land-use regulation
Organising access to land

Farm business plans
Branding
Festivals / events

agriculture / food

Diversification crops
pick your own
CSA
Allotment gardens
Food forests
City-food hub
Farmers market

farm infrastructure

Composting plant
Collective storage / machinery
Research / education
Mills / food processing
Farm incubators

recreation / leisure

Walking / cycling routes
Pick nick areas
Farm café / playground
Open air museum
Fishing pond

nature / biodiversity / culture

Nature reserves
Green-blue infrastructure
Green-blue veining
Agroecological farming
Cultural heritage
Agriculture traditions

water / soil

Water storage
Water retention
River restoration
Reducing tillage
Reducing pesticides
Increasing % organic
matter

Of course, a newly developed agricultural park cannot include all features of the model. It must build upon the existing local situation, the existing civic society and local policies. To be successful in the sustainable development of food systems and foodscapes, a democratic governance, an integration of social, environmental, and economic goals and the production of healthy food for all are essential. Partners of the AESOP4Food network plan to explore the model further within a series of living labs.

Bibliography

R Barrios E, Gemmill-Herren B, Bicksler A, Siliprandi E, Brathwaite R, Moller S, Batello C, Tittonell P (2020) The 10 elements of agroecology: enabling transitions towards sustainable agriculture and food systems through visual narratives. *Ecosyst People* 16(1):230–247. https://doi.org/10.1080/26395916.2020.1808705

Bui, S. (2015). *Pour une approche territoriale des transitions écologiques: Analyse de la transition vers l'agroécologie dans la Biovallée.* PhD thesis.

Dehaene M. and Tornaghi C. (2021). "Conclusions. The programmatic dimension of an agroecological urbanism", in TORNAGHI C., DEHAENE M. (eds.) (2021), *Resourcing an agroecological urbanism. Political, transformational and territorial dimensions*, London: Routledge; pp. 220-228

EESC (European Economic and Social Committee). (2004). *Opinion of the European Economic and Social Committee on Agriculture in peri-urban areas.* Brussels Sept. 2004. NAT/204,

Fanfani, D. (2019) Chapter 10. Agricultural Park in Europe as Tool for Agri-Urban Policies and Design: A Critical Overview David Fanfani in © Springer International Publishing AG, part of Springer Nature 2019, E. Gottero (ed.), *Agrourbanism*, GeoJournal Library 124, https://doi.org/10.1007/978-3-319-95576-6_10

IPES-Food. (2021). *A long food movement.*

IPES-Food. (2023) *From plate to planet: How local governments are driving action on climate change through food.*

La Rosa, D., L. Barbarossa, R. Privitera, & F. Martinico (2014). Agriculture and the city: A method for sustainable planning of new forms of agriculture in urban contexts. *Land Use Policy* 41 290–303

Lina María Hoyos Rojas. (2022). *Progressing on urban-rural connections: An Exploratory Approach towards an Agro-park Network in the Metropolitan Area of Lisb*on. Dissertação de Mestrado, Mestrado em Ordenamento do Território e Urbanismo Fevereiro de 2022

Lohrberg, F., Lička, L., Scazzosi, L., Timpe, A., & Verlag, J. (Eds.). (2016). *Urban agriculture Europe* (Vol. 38). Berlin: Jovis.

Marzec W. (2010) *Polityka dla miast, miasta dla polityki. O możliwości (i konieczności) radykalnej polityki miejskie*j. Praktyka Teoretyczna, 1: 81-92. https://doi.org/10.14746/prt.2010.1.6

Popławska M. (2020) *Towards Producer-Consumer Cooperation: Collective Learning in Alternative Food Networks as a Food Sovereignty Practice.* Praktyka Teoretyczna 4(38): 49–73. doi: 10.14746/prt2020.4.3

Sadura P., Murawska K., Włodarczyk Z. (2017) Wieś w Polsce 2017: diagnoza i prognoza. Warsaw: Fundacja Wspomagania Wsi.

Ville de Montpellier. (2022). *Présentation du projet lauréat, Futur Agriparc des Bouisses*, accessed from: https://actu.fr/occitanie/montpellier_34172/montpellier-grand-projet-la-metropole-leve-le-voile-sur-l-agriparc-des-bouisses_55553903.html

Webpages

DeHaene, M. and H. Renting, page on Agroecological Parks that resulted the Urbanising in Place project, an international and transdisciplinary project based on the experiences in four local cases (Brussels, London, Riga and Rosario).

https://www.agroecologicalurbanism.org/building-blocks/agroecological-park, accessed April 8, 2024.

PAPER SESSION 1.B
AGROECOLOGICAL
URBANISM

Urban rooftop farming in Brussels: an analysis from an agroecological point of view

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Urban rooftop farming in Brussels: an analysis from an agroecological point of view

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A vision of the city of tomorrow, with roofs covered in nourishing vegetation, is prompting an increasing number of real estate developers and policy makers to endorse and support rooftop farming projects. In Brussels, the municipality of Ixelles, our Agroecology Lab, and the social economy company Refresh have set up a project questioning the relevance of such initiatives in the current context, and experimenting in real conditions.

The L[ag]UM project (ERDF) features a rooftop market gardening space geared towards agroecology principles. It is led by a social enterprise focusing on professional integration, and it underpins participative research case study. The project examines various aspects: initiation and implementation conditions; agricultural practices and associated needs/challenges; the adopted model; and the degree of support available. The study also contextualizes the project in light of the socio-political environment of urban agriculture in Brussels, aiming to draw lessons about the relevance, the possible impacts and the operational requirements for the replication of this type of project.

The critical analysis of these diverse points enables us to emphasize crucial themes to be balanced such as multifunctionality of urban agricultural projects, the environmental costs and benefits, the degree of connectivity of the project with their socio-economic environment, and the long-term challenges to keep activities going on rooftops. Additionally, we question the desired type of agriculture in cities (agroecological vs. high-tech) and the necessary networks to sustain this (fertility flows, nurseries, distribution networks, labour force …).

Keywords: Rooftop farming, agroecology, urban agriculture.

Introduction

Urban agriculture and agroecology

Urban agriculture (UA) has experienced significant growth in recent years (Kumar and Yadav 2023). Since 2015, more than 200 cities worldwide have signed the Milan Urban Food Policy Pact, which aims to build more resilient urban food systems through the development of urban and peri-urban agriculture (Filippini *et al*., 2019). This growth involves both citizen-led UA (Ben-Othmen *et al*., 2023) and professional UA (O'Sullivan *et al*., 2019, Appolloni *et al*., 2021). Citizen-led UA takes the form of private gardens, community gardens, or "incredible edibles," (Ben-Othmen *et al*., 2023) and generally adopts an agroecological approach to implement food production. The professional urban agriculture sector also sometimes turns to agroecological principles, as many UA project leaders come from career changes and seek, through the profession of food production, to find meaning in their activities and fully invest in the transition to a fairer and more sustainable food system (Boutsen *et al*., 2018). These individuals also find in agroecology principles that support their vision and respond to their motivations.

Agroecology is simultaneously a science, a set of practices, and a movement (Wezel *et al*., 2019). This approach is based on three equivalent pillars: a scientific pillar that transdisciplinarily studies the interactions between the different components of the food system (applied food system ecology (Francis *et al*., 2003)), a technical pillar that implements a set of food production practices, land management, and the structuring of food-related networks (practices rooted in a territory, respectful of the environment and humans), and a political pillar through a movement that links ecological, social, and economic claims in the local context (see Agroecol. Sustain. Food Syst., 2017 for South America, or Landy and Doric, 2022 for India). This approach allows different project leaders to engage in the movement in a way that suits them and is adapted to their natural, social, economic, and political environment.

Agroecology is recognized as providing solutions to some of the major problems of the 21st century (Gliessmann 2014, Albanito *et al*., 2022, Bezner Kerr *et al*., 2023), such as soil and

water quality degradation (Acharya and Ghimire 2022), biodiversity loss (Ortiz *et al*., 2020), climate change (Snapp *et al*., 2021), and even partially, social and economic crises (D'Annolfo *et al*., 2017, Van der Ploeg 2019). This approach is acknowledged by international organizations (FAO 2015, OECD, FAO, UNCDF, 2016, HPLE 2019, CFS 2021, ICCP 2022) and by public policies, notably at the European level (European Green Deal, EU soil strategy for 2030, EU Biodiversity Strategy for 2030) and national level (Bellon and Ollivier 2018, Lampkin *et al*., 2021).

However, the implementation of certain agroecological principles in a professional context faces barriers of various types and at different scales, namely policy mismatches, inadequate mobilization of resources, insufficient market development (Schiller *et al*., 2020), and a lack of information regarding techniques and their effectiveness, as well as reluctance from producers who struggle to change certain paradigms and practices instilled during their training.

Rooftop farming

Rooftops constitute a quarter of the surfaces in major cities, and agricultural production on these spaces is considered by many authors as a serious alternative for the development of urban agriculture (Glaros *et al*., 2022, Appolloni *et al*., 2021, Drottberger *et al*., 2023). Rooftop agriculture can contribute both to service functions (i.e., multifunctionality of urban agriculture – Wegmuller and Duchemin 2010, Orsini *et al*., 2015) and to food production (e.g., a study by Orsini *et al*. (2014), which estimates that 77% of Bologna's vegetable demand could be met by cultivating on flat roofs). Real estate developers and policy makers are attracted by this vision and support the implementation of rooftop farming to meet several of the United Nations Sustainable Development Goals (namely SDGs 1, 2, 6, 7, 9, 11, 12, and 13 - Drottberger *et al*., 2023). Thus, the number of rooftop farms has been increasing since the late 1980s, with a significant rise around 2010, followed by a stabilization of growth around 2015, probably due to slow policy development in this area (Appolloni *et al*., 2021).

In their study on 185 rooftop farms around the world, Appolloni *et al*. (2021) identify that the majority of these projects involve open-air gardens (84%), primarily fulfilling urban quality of life and social-educational aims. Commercial projects show a balance between open-air and greenhouse conditions and often turn to state-of-the-art farming technologies and intensive plant cultivation systems (Specht *et al*., 2015; Benis and Ferrão, 2018). This type of agriculture commonly applies soilless techniques, which use inert substrates or hydroponic growing methods (Appolloni *et al*., 2021). Additionally, greenhouse farming is often a subset of Controlled Environment Agriculture, where high technologies are used to control temperature, light, moisture, and CO_2 levels, which requires a significant amount of energy. Some of these rooftop greenhouses are integrated with the host building, allowing them to exchange energy (heat and electricity, even photovoltaic electricity production), water (rainwater or wastewater recovery), and CO_2. The use of the building's outputs thus reduces the environmental impact of these greenhouses and the building during their operation, but it does not address the problem of the need for large amounts of energy and the dependence on high technology to maintain the system's operation.

An important feature of rooftop installations is that the building must have sufficient load-bearing capacity to support the weight of the installations and activities. This load-bearing capacity is integrated during the construction of the building if it is designed to support rooftop farming projects, or it requires reinforcement work before the installation of agricultural projects. Therefore, it is necessary to consider the environmental impact and the embodied energy required for the production of reinforcement materials and their transport to the construction site. Similarly, the environmental impacts of the materials used (notably for the manufacture of photovoltaic panels, pumps, motors, and farm infrastructure) are rarely included in the calculations (e.g., Peña *et al*., 2022).

Commercial rooftop farming projects seem to be heading in a direction that requires significant investment (infrastructure, equipment, technology - when used) and energy for operation.

These installation and operational conditions conflict with certain agroecological principles, which aim to use local materials for building infrastructure, minimize energy use for the production and transportation of these materials, minimize energy use and reliance on low-tech for production operations, and integrate production activities into local natural, social, economic, and political ecosystems. This raises the question of the feasibility of installing and developing rooftop production sites that adhere to agroecological principles, and the relevance of such production sites in a context of increasing awareness of planetary boundaries and the need to redirect desired trajectories towards greater sustainability.

The project L[ag]UM

L[ag]UM is a participatory action-research project initiated by the municipality of Ixelles (Belgium) and the Agroecology Laboratory of the Université Libre de Bruxelles, which studies professional urban agriculture in Brussels and has a rooftop vegetable production site. Production installation and management are ensured by the social economy enterprise Refresh, which also conducts professional integration, training, public awareness, and experiments on rooftop cultivation methods in agreement with AElab. Refresh operates a restaurant exclusively supplied with vegetables from the L[ag]UM rooftop, and also sells vegetable baskets to residents through an annual subscription system.

The site is located on the roof of a supermarket (whose activities are not connected to those of the rooftop farming project) in the heart of Brussels. It has a total area of 2200 m² and a cultivated area of approximately 900 m². The bulk of the cultivation is done in growing beds (of different heights depending on the load-bearing capacity of the roof), and demonstrative cultivation is also carried out in bags or vertical farming. All the water that falls on the roof is collected and stored in a 40m³ tank, filtered, and reused for irrigating the plantations.

The project was not designed according to agroecological principles but follows a logic of economic parsimony and a design oriented towards public reception and popularization. However, the operators of the site attempt to adhere to agroecological principles in their daily management of crops, in work management, in interactions with their local environment, and in the way they use the food produced on the roof (see adopted model below).

Initiation and implementation conditions

The project originated in 2013 under an urban renovation progam named "Sustainable Neighborhood Contract Maelbeek," funding a feasibility study for rooftop agriculture and building stability study. Subsequently, it sought financing from the European Regional Development Fund (ERDF), which covered research costs (salaries of two researchers over 4 years and research budget), site acquisition (15-year land lease from the supermarket to Ixelles municipality), infrastructure reinforcement beyond the original plan, production expenses for 3 years, and site managers' salaries for the same duration. The municipality of Ixelles managed site development and procured equipment (e.g., growing beds, substrate, irrigation, greenhouses).

Accepted by the ERDF in 2016, the project starts its construction phase simultaneously with the construction of the underlying supermarket, concluding in September 2020. Research begins, initially concentrating on the multifunctionality of urban agriculture in Brussels (Davila *et al*., 2022), in May 2020. At the same time, discussions on the model that will adopt Refresh, a social economy enterprise, to utilize the rooftop commence. The initial planting implementation occurs in April 2021, aligning with the commencement of a series of studies on cultivation practices, constraints, and facilitators on the reooftop.

The adopted model

Refresh's background included activities of professional integration unemployed persons by through sustainable catering contracts, and managing two food production sites: a private garden at the restaurant and a collective orchard a few streets away from the restaurant. The

opportunity to cultivate vegetables for use in Refresh's restaurant reinforced the short-circuit nature of the enterprise and initiated a series of activities focused on food production, involving public awareness, training in market gardening, and participation in action research projects

At first, the adopted model relied almost exclusively on subsidies: the European Commission's (FEDER) subsidies allowed Refresh to pay a full-time market gardener and a part-time research popularizer, while also meeting all food production expenses. Partial remuneration for kitchen staff comes from public funds designated for professional integration. Restaurant earnings are allocated to catering expenses and partially to the salaries of administrative staff. Initially, a specific quantity of vegetable baskets sold due to the impact of COVID-19, yet subscriptions notably declined in the subsequent year.

The strategic alignment of production activities tailored to the restaurant's needs and the sale of vegetable baskets, has facilitated the transformation of the initial model into a more sophisticated second iteration. In this enhanced version, 60% of the budget is provided by public administration for professional integration, as in the preceding model, for training for unemplyed persons in sustainable catering and food production, and for certain educational missions. The remaining 40% of the financial resources originate from restaurant-generated income (sourced from vegetables, herbs, edible flowers, and small fruits harvested in the rooftop), in addition to the retail of vegetable baskets to nearby residents, and some paid guided tours of the premises, (although most visits remain free but unguided). The overarching aim is to attain a balanced distribution of funding, with 50% being public and 50% self-sustaining. The project therefore remains multifunctional and seeks to optimize its social, environmental, and economic functions while maintaining strong political ideals.

Agricultural practices and associated needs and challenges

The L[ag]UM project strives to align with agroecological principles in both its philosophy and on-site practices. Nevertheless, the initial roof configuration, the selected cultivation substrates, and the highly urban site location present several challenges to implementing agroecological practices during production.

The first and most important to implement is the design of the site, which must remain flexible to adapt to field conditions (Caputo *et al*., 2014), along with developing a cultivation plan suited to the extreme growing conditions of rooftops (Orsini *et al.,* 2017) and the production flow channels. In our case, the design was crafted by a landscaping firm, and the arrangement of the various rooftop elements is fixed. For other rooftop agriculture projects, we recommend integrating the final food producer into the site design from the outset and allowing flexibility in the installations to better adapt. An agroecological site design must also incorporate spaces and operations that accommodate and support local biodiversity: we observed the presence of wild pollinators from the first year and actively worked to support them.

Regarding soil management practices, the substrate is a crucial element. In our case, it is a composite containing peat, lava rock, sand, alsil, and vegetal soil. Most of these components have unsustainable origins and are not recommended for agroecological cultivation. However, there is currently no alternative substrate on the market that is sufficiently light, local, and sustainable to replace our composite. It is necessary to develop production chains for substrates based, for example, on compost from urban organic matter and soil from urban soil decontamination centers. Once balanced, such substrates could be a viable alternative for soilless cultivation.

As for the practices themselves, our observations show that it is entirely possible to achieve professional food production while adhering to the principles of no-till farming (MSV Normandie, 2022), which avoids turning the soil (or even touching it) and feeds the soil microorganisms and microfauna with abundant mulches suited to the soil's functional state. These techniques present two challenges: the adoption of such practices by farmers trained to turn the soil and leave it bare, or even treat it; and the provision of resources for urban

agriculture projects, such as manure, park green waste, tree pruning residues, hay, and straw. Each resource requires a supply chain that still needs to be established in cities, the development of appropriate logistics, and the evolution of regulations to allow these practices to be implemented structurally.

Concerning water management, it is crucial to ensure that no pollution sources are introduced into the site's infrastructure, as water circulating in a closed system will accumulate potential pollutants and transfer them to the cultivation beds during irrigation. Similarly, maintaining sufficient microbial life in the cultivation soil is essential to sequester excess nutrients from the substrate, as these nutrients could be leached by rain and accumulate in the tank, causing imbalances in the production system. Additionally, designing tanks large enough to prevent water shortages during drought periods is necessary. Connecting other rooftops to the tank for water supply is also beneficial.

Finally, regarding cultivated plants, we observe that it is very difficult for producers/trainers/educators to add seed or plant production to their activities. These are specialized professions that require specific resources and time. Therefore, it is necessary to establish local production chains for peasant seeds, which select varieties adapted to the urban environment and provide producers with quality seeds or plants in sufficient quantities.

Brussels agriculture context

The regional strategy for sustainable food : Good Food

The Good Food strategy stems from the collaboration of two regional authorities: Brussels Environment and Brussels Economy and Employment. The initial iteration of Good Food governed Brussels' urban agriculture from 2015 to 2020. Subsequently, the Good Food 2 strategy, formulated through collaborative efforts among various stakeholders in sustainable food from 2020 to 2022, was enacted, extending its effectivity until 2030. This strategy aims to bolster both citizen and professional agriculture, along with promoting sustainable supply chains for retailers and the restaurant sector. While Good Food financially assists the inception of new urban agriculture projects, offering a maximum of €25,000 per project annually, it does not provide structural support for production. In the Brussels region, only a handful of traditional producers on peripheral lands benefit from CAP subsidies, routed through the Flemish region due to Brussels' non-agricultural status. Consequently, Brussels intra-muros producers do not have access to the CAP due to this reason and also because of the extremely small areas they cultivate. The lack of structural subsidies puts Brussels producers at a disadvantage compared to subsidized producers, forcing them to sell their products at prices that do not reflect the labor involved but must remain competitive with the market. A Brussels agricultural ordinance is expected to be established in 2024, ensuring structural support for producers, but the budget for this support comes from a regional fund and thus remains limited.

In parallel, the administrations overseeing urban agriculture provide funding to a range of entities, primarily associations, that aid food producers across diverse sectors. These include the Urban Agriculture Facilitator, Local Economy Counters, the Brussels Urban Agriculture Federation, Credal, the Début des Haricots association, GASAP, Agroecology in Action movement. These entities offer support, guidance, and assistance in establishing or advancing urban agriculture initiatives, covering legal, economic, organizational, and technical aspects. Sustaining this ecosystem centred on primary production greatly benefits project leaders by fostering the formation and invigoration of a Brussels urban agriculture community and by advocating for producers' needs and appeals within governmental and political spheres.

Other public supports

Other governmental bodies, including those overseeing training (Brussels Formation), social and health services (COCOF), and education (COCOM), are occasionally involved in urban agriculture projects focusing on these domains. Access to their support is difficult because these administrations often redirect agricultural project leaders to agriculture-specific

authorities, disregarding actions undertaken within their own spheres of competence. To tackle this issue, a memorandum advocating for the recognition and support of urban agriculture's multifunctionality was formulated and endorsed by approximately 70 urban agriculture stakeholders. Additionally, a study aimed to delineate these functions, further fortifying the demand for support (Davila *et al*., 2022). Nevertheless, currently, no structural support for multifunctionality exists at the Brussels level.

Municipalities constitute an additional level of public authority supporting urban agriculture. They achieve this by providing land, specific logistical assistance (including the provision of resources like shredded tree pruning residues), or by internally initiating urban agriculture projects, which subsequently benefit from financial support, equipment purchase, human resources support, or facilitation of administrative procedures.

Conclusion

Rooftop urban agriculture initiatives can tend towards agroecology. However, several barriers must be addressed, particularly those associated with the soilless nature of the projects, the site's location or layout, the absence of supply chains for essential raw materials needed in agroecological methods, and regulations poorly suited to micro or meso-scale production with a peasant component.

The question of the relevance of rooftop urban agriculture projects raises several issues: 1) the use of non-renewable materials and resources for the construction or reinforcement of buildings, infrastructure, and equipment, leading to a trade-off between what can be obtained as local resources and feasibility; 2) the production practices implemented, which should aim to respect the natural cycles of plants and ecosystems and integrate production activities into the functioning of the immediate natural environment, thereby moving away from methods of cultivation in controlled environments using high-tech; 3) the social impacts of multifunctional urban agriculture projects, especially in densely populated areas, which is often the case with rooftop farms; 4) the type of products derived from the operation that should be seasonal and grown without synthetic inputs to contribute to the good health of consumers. Under these conditions, it can be affirmed that multifunctional and agroecological urban agriculture projects are relevant for the cities of tomorrow.

Bibliography

Acharya, B. S., & Ghimire, R. (2022) *Agroecological approaches for soil health and water management* (2022) *MDPI eBooks*. https://doi.org/10.3390/books978-3-0365-4565-3.

Appolloni, E. *et al.* (2021a) 'The global rise of urban rooftop agriculture: A review of worldwide cases,' *Journal of Cleaner Production*, 296, p. 126556. https://doi.org/10.1016/j.jclepro.2021.126556.

Appolloni, E. *et al.* (2021b) 'The global rise of urban rooftop agriculture: A review of worldwide cases,' *Journal of Cleaner Production*, 296, p. 126556. https://doi.org/10.1016/j.jclepro.2021.126556.

Bellon, S. and Ollivier, G. (2018) 'Institutionalizing agroecology in France: Social circulation changes the meaning of an idea,' *Sustainability*, 10(5), p. 1380. https://doi.org/10.3390/su10051380.

Benis, K. and Ferrão, P. (2018) 'Commercial farming within the urban built environment – Taking stock of an evolving field in northern countries,' *Global Food Security*, 17, pp. 30–37. https://doi.org/10.1016/j.gfs.2018.03.005.

Ben-Othmen, M.A. *et al.* (2023) 'Community-based urban agriculture for food justice,' in *Elsevier eBooks*, pp. 11–40. https://doi.org/10.1016/b978-0-12-820286-9.00008-x.

Caputo, S., Iglesias, P. and Rumble, H. (2017) 'Elements of rooftop agriculture design,' in *Urban agriculture*, pp. 39–59. https://doi.org/10.1007/978-3-319-57720-3_4.

CFS (2021) 'CFS policy recommendations agroecological innovative approaches for sustainable agriculture and food systems that enhance food security and nutrition,' *At the Forty-eighth (Special) Session "Making a Difference in Food Security and Nutrition".* Retrieved from

https://www.fao.org/fileadmin/templates/cfs/Docs2021/Documents/Policy_Recommendations_Agroecology_other_Innovations/2021_Agroecological_and_other_innovations_EN.pdf (Accessed 22.05.2024)

D'Annolfo, R. *et al.* (2017) 'A review of social and economic performance of agroecology,' *International Journal of Agricultural Sustainability*, 15(6), pp. 632–644. https://doi.org/10.1080/14735903.2017.1398123.

Davila, F. *et al.* (2022) 'The multifunctionality of urban agriculture projects in Brussels,' *Acta Horticulturae*, (1356), pp. 219–232. https://doi.org/10.17660/actahortic.2022.1356.26.

Drottberger, A. *et al.* (2023) 'Urban farming with rooftop greenhouses: A systematic literature review,' *Renewable & Sustainable Energy Reviews*, 188, p. 113884. https://doi.org/10.1016/j.rser.2023.113884.

European Commission (2019) *The European Green Deal. Communication from the Commission to the European Parliament, the European Council, the European Economic and Social Committee and the Committee of the Regions* [online]. 24 p. Retrieved from https://eur-lex.europa.eu/ legal-content/EN/TXT/?uri=COM:2019:640:FIN (Accessed 24.05.2024)

European Commission (2020) *EU Soil Strategy for 2030, COM (2020) 380 final*, Retrieved from https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A52020DC0380 (Accessed 24.05.2024)

European Commission (2021) *EU Soil Strategy for 2030, COM (2021) 699 final*, Retrieved from https://ec.europa.eu/environment/publications/eu-soil-strategy-2030_en (Accessed 24.05.2024)

FAO (2015) 'Agroecology for food security and nutrition,' *Proceedings of the FAO international symposium*, p. 406. Retrieved from http://www.fao.org/3/a-i4729e.pdf (Accessed 20.05.2024)

Filippini, R., Mazzocchi, C. and Corsi, S. (2019) 'The contribution of Urban Food Policies toward food security in developing and developed countries: A network analysis approach,' *Sustainable Cities and Society*, 47, p. 101506. https://doi.org/10.1016/j.scs.2019.101506.

Francis, C. *et al.* (2003) 'Agroecology: the ecology of food systems,' *Journal of Sustainable Agriculture*, 22(3), pp. 99–118. https://doi.org/10.1300/j064v22n03_10.

Glaros, A. *et al.* (2022) 'Horizon scanning and review of the impact of five food and food production models for the global food system in 2050,' *Trends in Food Science & Technology*, 119, pp. 550–564. https://doi.org/10.1016/j.tifs.2021.11.013.

Gliessman, S. (2017) 'A brief history of agroecology in Spain and Latin America,' *Agroecology and Sustainable Food Systems*, 41(3–4), pp. 229–230. https://doi.org/10.1080/21683565.2017.1292390.

HLPE (2019) 'Agroecological and other innovative approaches for sustainable agriculture and food systems that enhance food security and nutrition,' *Food Security and Nutrition of the Committee on World Food Security*, Rome, p.163.

IPCC (2023) Climate Change 2022 – Impacts, adaptation and vulnerability. https://doi.org/10.1017/9781009325844.

Kerr, R.B. *et al.* (2023) 'Agroecology as a transformative approach to tackle climatic, food, and ecosystemic crises,' *Current Opinion in Environmental Sustainability*, 62, p. 101275. https://doi.org/10.1016/j.cosust.2023.101275.

Maraichage Sol Vivant Normandie (2022) *Le Guide du maraîchage sur sol vivant - 6 ans de retrours d'expériences*, p. 124. Retrieved from https://normandie.maraichagesolvivant.fr/ressources/ (Accessed 24.05.2024)

Lampkin, N., Schwarz, G. and Bellon, S. (2021) 'Policies for agroecology in Europe, building on experiences in France, Germany and the United Kingdom,' *Zenodo (CERN European Organization for Nuclear Research)* [Preprint]. https://doi.org/10.3220/lbf1611684471000.

Landy, F. and Dorin, B. (2022) 'L'État au secours de la transition agroécologique ? Le cas de l'Inde,' *Mouvements*, n° 109(1), pp. 94–106. https://doi.org/10.3917/mouv.109.0094.

Orsini, F. *et al.* (2014) 'Exploring the production capacity of rooftop gardens (RTGs) in urban agriculture: the potential impact on food and nutrition security, biodiversity and other ecosystem services in the city of Bologna,' *Food Security*, 6(6), pp. 781–792. https://doi.org/10.1007/s12571-014-0389-6.

Orsini, F. *et al.* (2017) *Rooftop Urban Agriculture*, *Urban agriculture*. https://doi.org/10.1007/978-3-319-57720-3.

Ortiz, A.M.D. *et al.* (2021) 'A review of the interactions between biodiversity, agriculture, climate change, and international trade: research and policy priorities,' *One Earth*, 4(1), pp. 88–101. https://doi.org/10.1016/j.oneear.2020.12.008.

O'Sullivan, C.A. *et al.* (2019) 'Strategies to improve the productivity, product diversity and profitability of urban agriculture,' *Agricultural Systems*, 174, pp. 133–144. https://doi.org/10.1016/j.agsy.2019.05.007.

OECD, FAO, and UNCDF (2016) *Adopting a territorial approach to food security and nutrition policy* (2016) *OECD rural studies*. https://doi.org/10.1787/9789264257108-en.

Peña, A., Rovira-Val, M.R. and Mendoza, J.M.F. (2022) 'Life cycle cost analysis of tomato production in innovative urban agriculture systems,' *Journal of Cleaner Production*, 367, p. 133037. https://doi.org/10.1016/j.jclepro.2022.133037.

Schiller, K.J.F. *et al.* (2019) 'Exploring barriers to the agroecological transition in Nicaragua: A Technological Innovation Systems Approach,' *Agroecology and Sustainable Food Systems*, 44(1), pp. 88–132. https://doi.org/10.1080/21683565.2019.1602097.

Snapp, S. et al. (2021). *Agroecology and climate change rapid evidence review: Performance of agroecological approaches in low-and middle-income countries*, p. 64

Specht, K. *et al.* (2015) 'Zero-Acreage farming in the city of Berlin: An aggregated stakeholder perspective on potential benefits and challenges,' *Sustainability*, 7(4), pp. 4511–4523. https://doi.org/10.3390/su7044511.

Srinivasan, K. and Yadav, V.K. (2023) 'An integrated literature review on Urban and peri-urban farming: Exploring research themes and future directions,' *Sustainable Cities and Society*, 99, p. 104878. https://doi.org/10.1016/j.scs.2023.104878.

Van Der Ploeg, J.D. *et al.* (2019) 'The economic potential of agroecology: Empirical evidence from Europe,' *Journal of Rural Studies*, 71, pp. 46–61. https://doi.org/10.1016/j.jrurstud.2019.09.003.

Wegmuller, F. and Duchemin, E. (2010) 'Multifonctionnalité de l'agriculture urbaine à Montréal : étude des discours au sein du programme des jardins communautaires,' *VertigO* [Preprint], (Volume 10 numéro 2). https://doi.org/10.4000/vertigo.10445.

Wezel, A. *et al.* (2009) 'Agroecology as a science, a movement and a practice. A review,' *Agronomy for Sustainable Development*, 29(4), pp. 503–515. https://doi.org/10.1051/agro/2009004.

Agroecologics: Reassess Urbanization Through Agri-Urban Design

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Agroecologics:
Reassess Urbanization Through Agri-Urban Design

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The interconnected issues and associated challenges of current urbanisation processes – regarding the existing food system, weather and climate, the ecological debate, and governance – frame the overarching need to explore an alternative planning paradigm. One key aspect of meeting this challenge is exploring alternative densification scenarios in the built environment without giving up productive agricultural land.

This paper advocates for a novel approach, by introducing the concept of an „Agroecologics" to strike a new balance between built and unbuilt environments. The term refers to the spatial logics of an agroecological urbanism presented in the form of an agri-urban design. Rather than offering a prescriptive solution, the definition of Agroecologics represents a novel planning strategy that incorporates agriculture and soil as essential components of urban planning, employing various mapping techniques. Agroecologics were investigated through a diverse array of mapping tools, ranging from field observation and sketching to retracing existing situations to develop a soil suitability index. By applying such different mapping methods, it proposes a planning reference – an agri-urban design – that provides a way of thinking about agro-ecology and its spatial implications.

The case study of Luxembourg serves as a pertinent starting point for rethinking agriculture in terms of spatial and socio-economic implications within urban planning. Despite significant pressure on land and real estate, Luxembourg possesses notable amounts of buildable but vacant land. The paper introduces an agri-urban zoning proposal, marking a departure from conventional development plans. The alternative planning reference presented in this paper serves as a thinking framework for agroecology and urbanization, offering insights applicable not only to Luxembourg but also to other similar contexts. Drawing on the author's PhD research project and ongoing post-doctoral research, the paper employs a mixed-method approach, engaging disciplines such as architecture, urbanism, agriculture, landscape planning, and geography.

Keywords: agroecology, agri-urban design, GIS (AHP Method), mixed-method, urban planning, Luxembourg

Introduction

The interconnected issues of urbanization—affecting the food system, climate, ecology, and governance—necessitate an exploration of alternative planning paradigms. One approach to this challenge is employing diverse mapping methods to explore urban densification strategies without sacrificing productive agricultural land.

This paper introduces the concept of 'Agroecologics,' a term referring to the spatial logics of agro-ecological urbanism, presented as an agri-urban design (Weichold, 2021). Unlike traditional blueprints, Agroecologics offers a new planning strategy that integrates agriculture and soil as tools for urban planning through various mapping techniques. These methods include field observation, sketching, and developing a soil suitability index. By applying these diverse mapping techniques, Agroecologics proposes an agri-urban design that reimagines land use, incorporating agroecological principles into existing planning paradigms.

Luxembourg serves as a useful case study for rethinking agriculture within spatial and socio-economic planning contexts. Despite significant pressure on land and real estate, Luxembourg has a noticeable amount of buildable but vacant land (L'Observatoire de l'Habitat, 2019a, 2019b; Paccoud, 2020). Challenges such as uneven land ownership, minimal ground tax, and municipalities' failure to exercise pre-emption rights hinder new developments (Hertweck, 2020; Becker et al., 2019; Chilla and Schulz, 2011). Additionally, rising agricultural land prices, conversion of subsidized agricultural plots for non-agricultural purposes, and cross-border

renting of agricultural holdings exacerbate these issues (Weichold, 2021). Importantly, agriculture is often excluded from urban design and planning in Luxembourg, and soil assessment is rarely considered at any planning level. This oversight persists despite evidence that evaluating land based on soil quality is crucial for sustainable urbanization (Ibid.).

This paper is divided into three parts to address these issues. Part one situates the paper within the broader study, explaining the rationale for developing a prospective agro-ecological agenda using design suggestions and mapping techniques. It illustrates the implications of Agroecologics through one exemplary alteration applied to the case study Luxembourg. Part two addresses the structural implementation of agri-urban design in spatial planning, focusing on the governance-level. The paper concludes with a summary on utilizing these mapping techniques to create a future reference catalogue for agro-ecological design.

Agroecologics – The Spatial Logics of an Agri-Urban Design

Mapping Agroecologics represents an initial effort to formulate an agri-urban design for Luxembourg. This concept draws on Michel De Certeau's distinction between "strategy" (formal structures) and "tactics" (seizing opportunities to alter dominant production forces). By applying these strategies and tactics, the project aims to redefine potential Agroecologics— spatial logics for agri-urban design in Luxembourg—through iterative processes that address conflicts and paradoxes.

Similar to Christopher Alexander's creation of a new language for building codes, Agroecologics seeks to establish a code or "pattern" for agri-urban design. Just as reference books like Neufert guide built spaces, unbuilt spaces, particularly those within agro-ecological urbanism (Tornaghi and Dehaene, 2021), need definition through agroecological mapping techniques and a design reference catalogue.

Agroecologics relies on various mapping strategies across different scales, involving multiple disciplines such as architecture, urbanism, agriculture, landscape planning, and geography. These strategies require mapping and implementation at the territorial, municipal, neighborhood, building, and field or parcel scales. The method involves a multi-dimensional mapping process, exploring existing agricultural fabric, potential agri-urban landscapes, public spaces, impermeabilization gradients, and soil suitability levels.

Seven Suggestions for an Agri-Urban Design

Rethinking agriculture in Luxembourg requires a multi-scale approach that addresses various planning strategies. Seven key suggestions for an agri-urban design form the basis for this rethinking.

1. Prioritize Agricultural Soil Fertility: Land development should prioritize agricultural soil fertility, promoting sustainable, compact development within existing building perimeters and avoiding valuable agricultural land.

2. Create Agri-Urban Zones: Agri-urban zones should integrate production, protection, and housing, implementing agricultural production quotas in new developments and reusing existing agri-urban areas.

3. Diversify Landscape Management: Landscape management should be diversified through crop rotation and support for different farming methods, including small-scale, medium-scale, and intensive farming. Open landscapes should be preserved with active agriculture, giving agroecological farmers a central role.

4. Utilize Unused or Underused Land: Unused or underused land, including public parks and forests, should be utilized for farming. Land use conflicts on high-quality farmland should be addressed, and buildable but vacant land should be allocated for agri-urban activities.

5. Develop a Flexible, Long-Term Planning Framework: A flexible, long-term planning framework should support agroecological urbanism. This framework should include innovative food planning actions and new land ownership models to ensure access to land and fresh food, serving educational and ecological purposes.

6. Reserve and Protect Fertile Land: The most fertile land should be reserved and protected for sustainable farming, with land access ensured through collective management, leases, and ownership.

7. Promote Multifunctional Agriculture and Land Use: Multifunctional agriculture and land use should be promoted to diversify farmers' incomes, incorporating community-supported agriculture and other initiatives into the agricultural preservation and production discussion.

By mapping an agri-urban design, this paper propose a flexible and adaptable planning paradigm capable of reconciling, enhancing, and transforming urban spaces. This represents just the beginning of a broader conversation and experimentation around the spatialisation of an agroecological urbanism in the form of an agri-urban design. In doing so, it distinguishes between various strategies that need to be thought of in a new way and, above all, in relation to each other as well as to the built environment. The subsequent section will delve into visualisation of different agri-urban design strategies, illustrated in Luxembourg's agri-urban conditions of agglomeration zones, pressure zones, and quiet and border zones. One exemplary case will be first described and then visualized through proposed alterations within the agri-urban context.

Exemplary Strategies and Alterations for Luxembourg's Agri-Urban Design

Multiple Strategies and Alterations have been proposed for Luxembourg's Agri-Urban Design (see Weichold, 2021). For example, in agglomeration zones, which are defined as pivotal areas of urban activity, the suggestion is to implement Agroecological corridors instead of conventional greenbelts. These corridors, linking urban and peri-urban regions, serve various functions such as facilitating small-scale farming, managing watersheds, and providing recreational spaces. Similarly, Border Zones, currently occupied by services like petrol stations, are recommended for transformation into Agroecological Incubators, fostering soil regeneration and indoor agriculture. Another strategy is applied to Pressure Zones, which are defined as areas between agglomeration zones, present opportunities for densification with an agricultural quota integrated into new developments to ensure balanced growth. Inspired by projects like Almere Oosterwold, differentiating between agri-urban plots supports diverse functions like agriculture, landscape preservation, and housing.

Furthermore, a particular approach for the Quiet Zones "Plan d'assolement maraîchage" for Luxembourg, will be detailed further. These rural regions, characterized by minimal population centers and services, thrive on agriculture, forestry, and tourism. To safeguard the rural character and land quality, the strategy proposes a sectoral plan similar to Geneva's "Plan d'assolement maraîchage," facilitating land accessibility through leasing and offering planning security for farmers. Small-scale farming can flourish in urban and peri-urban fringes, while medium agricultural holdings employing agroecological principles find their place in quiet zones. Diverse crop rotation improves soil quality and enhances landscape diversity, with various zones designated for home gardens, permaculture farms, orchards, agritourism, pasturage, and intensive agriculture. The phased implementation of these strategies includes two stages specifically targeting Quiet Zones. In Phase 1, the focus is on introducing diverse functions within villages and towns while concurrently establishing agri-urban zones. This initial step sets the groundwork for integrating agricultural activities and fostering the development of agro-urban landscapes. Moving into Phase 2, the emphasis shifts towards the conversion of monocultural fields into varied agroecological agricultural systems. This phase is pivotal for enhancing biodiversity, improving soil health, and promoting sustainable farming practices

within Quiet Zones. Through these successive phases, the objective is to gradually transition these areas into thriving centers of agricultural activity while maintaining their rural character and ecological integrity (Figure 1-2).
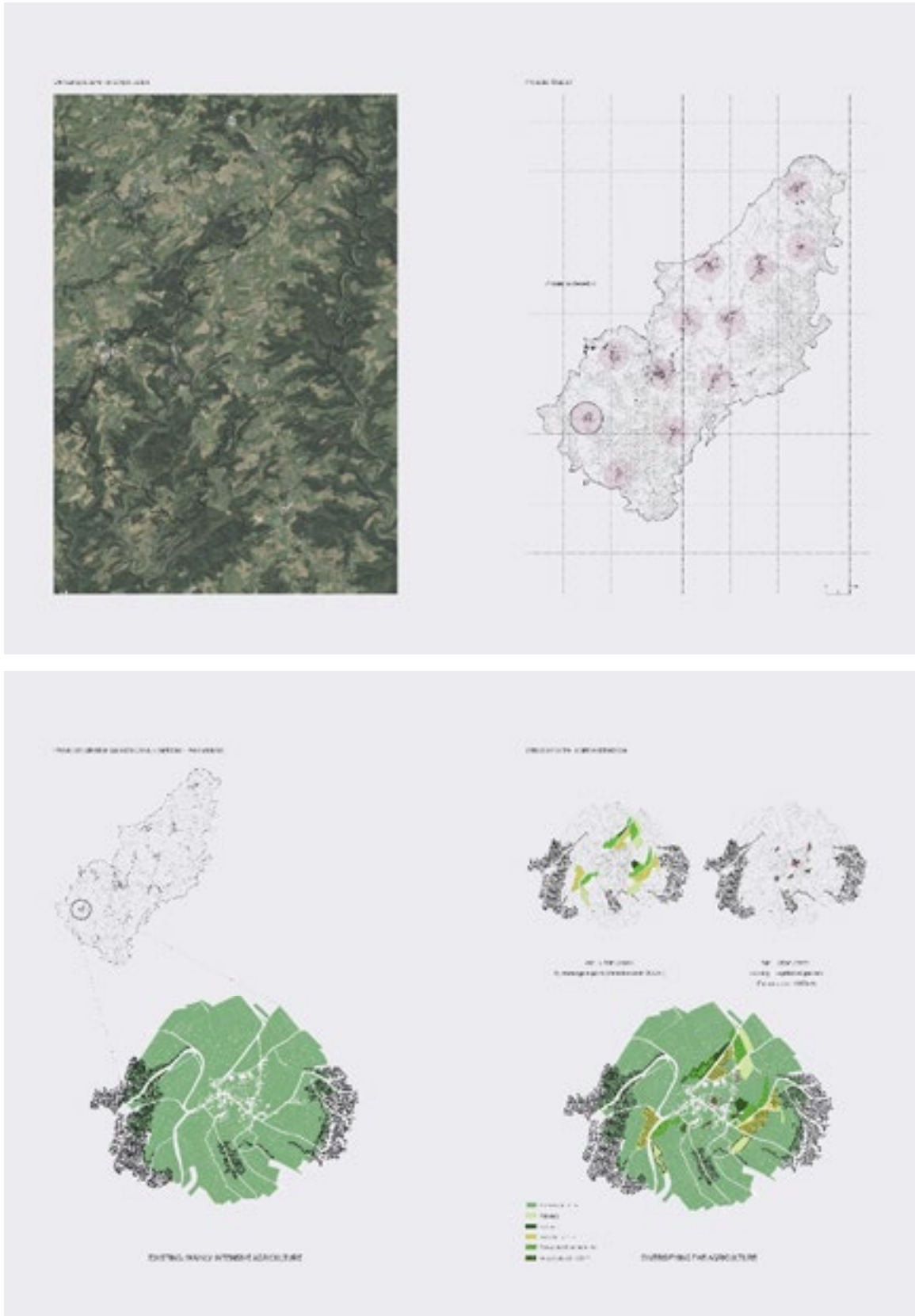
Figure 1-2: Phasing and alteration applied to Clervaux quiet zone – Weicherdange.

Framework for Potential Integration into Spatial Planning

The implementation of an agri-urban design for Luxembourg also needs changes on the level of governance. The explanation of first directions of how such an agri-urban design can be implemented are summarised in this section as it draws through all the previously described zones of the agri-urban conditions. To advance agroecological urbanism, it is essential to incorporate agriculture into spatial planning instruments. For this, two structural innovations are needed. Firstly, the adaptation of existing spatial planning instruments. Secondly, the creation of an alternative land management model through land appropriation and administration.

Adaptation of Existing Spatial Planning Instruments

The key instruments of spatial planning in Luxembourg are the General Land Use Plan (PAG), where the planning sovereignty lies with the municipalities, and the Sectoral Master Plans (PDAT, PDS), with the four areas of transport, housing, landscape and economy. Both are binding instruments, setting out general guidelines for future land use on a territorial and urban level. Adaptation are proposed at a national, urban level an architectural level (Figure 3).

Figure 3: Organigram. Adaptation of existing planning instruments and organisational implementation.

On the national level, the implementation of an additional sectorial plan (PDAT, PDS) dedicated to the protection and production of agricultural land is recommended. By classifying such a masterplan, valuable, productive land could be protected, and the need for new construction may be reconsidered according to the value of its soil quality. To determine this, a land use suitability map had been developed indicating potential areas for protection and production of agricultural land. Besides introducing a new sectorial plan for agriculture, the remaining masterplans for housing and economic activity zones should also be adjusted for the allocation of agri-urban activities; for example, through integrating BIA or a greening zone with a quota dedicated to agricultural production (Figure 4).
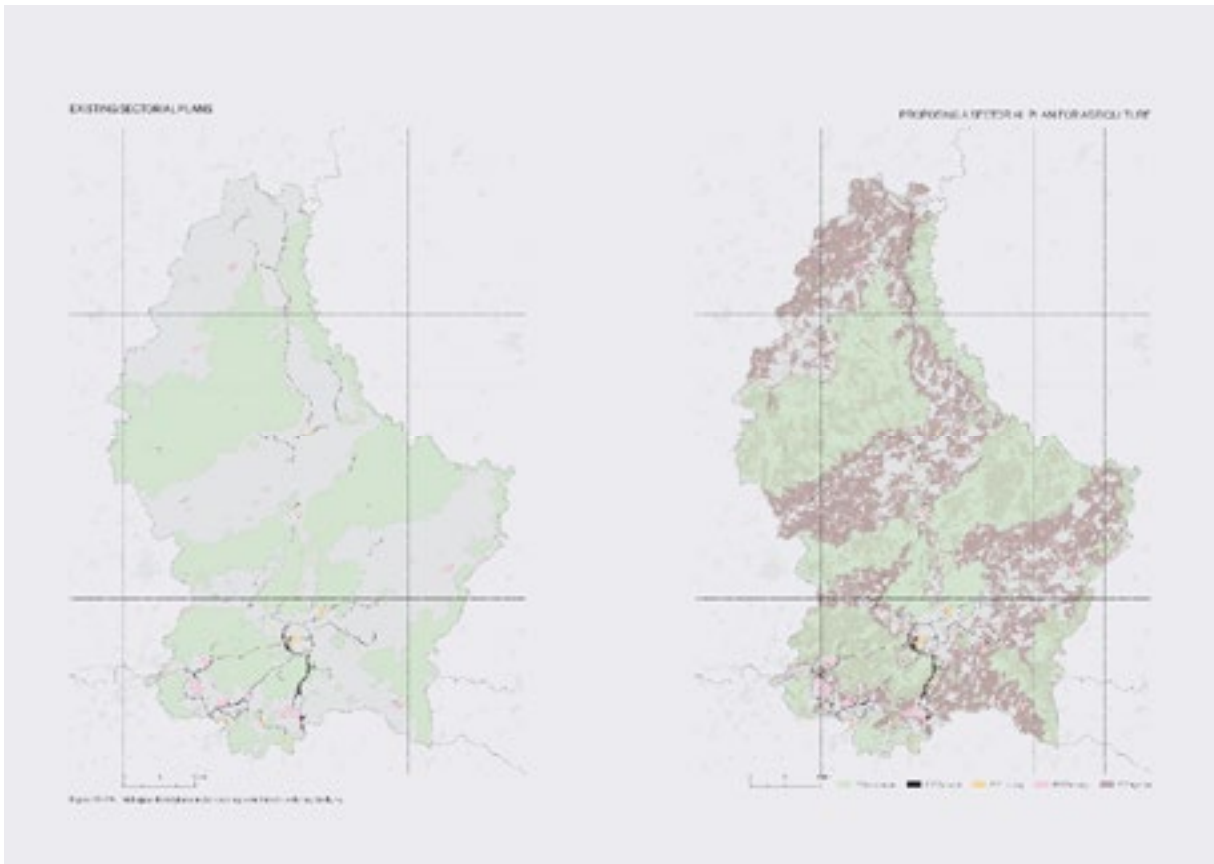
Figure 4: Existing Sectoral Plans and a Proposed Agricultural Sectoral Plan

On the municipality level, the introduction of a "new" zoning type - the so-called agri-urban zone (AGUR), is defined as a hybrid that allows densification while protecting agricultural, valuable soil, see Figure 5. Such zoning, which combines residential areas and agricultural production, is not yet defined in the PAG. Compared to the existing mixed rural zone (MIX-u) – which is a protection zone for agriculture and allows the development of only single-family houses – the agri-urban zone allows more flexibility of the buildable while respecting the given land condition. However, it must be stated that too much flexibility might not be advisable that's why a monitoring instrument should be considered. To define further essential parameters a more precisely research is needed.

Besides, adding a "new" zone, the existing PAG zonings should be adjusted by allowing reinforcement of existing rooftops, for example, through greenhouses. The "Zone special," which defines a certain flexibility of use, could be declared as the main zone for Urban Agriculture.

On an architectural scale the constructional realisation can be defined through a green-agricultural plot ratio within the Detailed Land Use Plan (PAP), for example through such a ratio, a quota can be specified for greenery and production. While BIA is not organic per se, it could still be included because of the beneficial cooling effects it has on buildings, and the educational and recreational space it offers.

Figure 4: Proposed adaptation within the PAG, by including an agri-urban zone for Clervaux munipality

Management of the Agri-Urban Land

The management of the agri-urban land builds on a large network of stakeholders including representatives of local farmers, the municipality (or even the introduction of a regional planning level), independent public-sectors (Fonds du Logement/ SNHBM), representatives of users and a board of private sector, since most of the areas are in private hands (Figure 3). The ownership ideally is lies by a public authority (region or municipal) to guarantee access to land and low prices. Just as with the existing pre-emptive rights, the agri-urban landscape areas can, when offered for sale, be purchased from private owners by the public authority. The management could be through a foundation[1] or the administration of a municipality or city, which grants land under building law.[2] Managed by such an institution, land can be leased by private individuals or by a cooperative of users. The institution decides, together with the users, where and how to cultivate the land. It also gives educational and financial support in building multifunctional and ecologically interdependent agroecological farming initiatives. Further, participatory planning processes, involving citizens, farmers, representatives of the community and other stakeholders, define a detailed formulation of the construction of the zones. Lastly, transforming towards an agri-urban landscape does not happen overnight. Instead, it is a slow process that needs to be considered economically under the current market and land access conditions.

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[1]The land management could also be realised through an association like the "Neustart Schweiz: Lebenswerte Nachbarschaften." According to the new paradigms of post-growth society, the Swiss association supports cooperatively organised living space development in Switzerland. Economically, they try to withdraw land and housing from speculation. It is an entrepreneurial approach with great potential to relocalise the economy and strengthen self-sufficiency and subsistence. In the spirit of Solidarity Farming, food purchases are contractually regulated. This gives the farmer financial security, reduces food waste and long transport routes, and keeps prices low.

[2] Similar to Almere Oosterwold.

Conclusion: Making use of the Agroecological Design References

This paper has employed various mapping techniques, such as field observation and soil suitability indexing, to delineate Agroecologics. These methods are crucial in envisioning an agri-urban design, offering a new perspective on land use. Rather than presenting a fixed scenario, the paper outlines a direction for applying agri-urban principles to Luxembourg's landscape and beyond. It proposes an alternative planning paradigm centered on the soil's agro-ecological qualities, reflecting on land, soil, space, and governance.

The transformative agenda of agro-ecological design highlights its potential ecological, social, and spatial benefits. These proposals, though not exhaustive, suggest ways to foster a renewed relationship between urban and agricultural areas, emphasizing sustainability. They offer a flexible strategy adaptable to different scales within Luxembourg, promoting a harmonious coexistence between urban and rural spaces.

Moving forward, further collaboration among experts and practitioners is essential to refine these proposals, considering economic and labour aspects. Detailed design research is necessary to explore the implications of these strategies at urban and architectural scales. Additionally, the feasibility of implementing agri-urban design within Luxembourg's existing planning framework remains a critical question.

While this paper does not provide definitive answers, it examines the potential and limitations of integrating agri-urban design principles for sustainable urban development, using Luxembourg as a case study. Each city has its unique dynamics, influencing its ability to adopt or resist such trends, emphasizing the need for contextual analysis and adaptation.

References:

ALEXANDER, C., ISHIKAWA, S. & SILVERSTEIN, M. 1977. A pattern language: towns, buildings, construction, New York, Oxford University Press.

BECKER, T., HESSE, M. & SCHULZ, C. 2019. Qualitatives Wachstum in Stadt und Land? Elefant im Raum und zugleich leerer Signifikant. In: RECKINGER, C. & URBÉ, R. (eds.) Sozialalmanach 2019. Luxembourg: Caritas Luxembourg.

CERTEAU, M. D. 2002. The Practice of Everyday Life (1980), Berkeley, Los Angeles, London, University of California Press.

CHILLA, T. & SCHULZ, C. 2011. Raumordnung in Luxemburg/ Aménagement du Territoire au Luxembourg, Luxembourg, Éditions Guy Binsfeld.

HERTWECK, F. 2020. Architecture on Common Ground. The Question of Land: Positions and Models, Zurich, Lars Müller Publishers and University of Luxembourg.

L'OBSERVATOIRE DE L'HABITAT 2019a. Le degré de concentration de la détention du potentiel foncier destiné à l'habitat en 2016. Luxembourg: La Note de l'Observatoire de l'Habitat, N° 23.

L'OBSERVATOIRE DE L'HABITAT 2019b. Le potentiel foncier destiné à l'habitat au Luxembourg en 2016. Luxembourg: La Note de l'Observatoire de l'Habitat, N° 22.

PACCOUD, A. 2020. The top tail of the property wealth distribution and the production of the residential environment. International Journal of Housing Policy, 20, 100-119.

TORNAGHI, C. & DEHAENE, M. 2021. Resourcing an Agroecological Urbanism: Political, Transformational and Territorial Dimensions, New York-Abingdon, Routledge.

WEICHOLD, I. 2021. Agroecologics. Towards a territorial, integrative Agri-Urban Design. Luxembourg as a Case Study. PhD thesis, University of Luxembourg, Department of Geography and Spatial Planning.

Unlocking the agroecological potential of Lucanian farming and food practices

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Unlocking the agroecological potential of Lucanian farming and food practices

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Our ongoing research involves the study, through a spatial, social and ethnographic approach, of selected local food production practices, which promote diverse alternatives to dominant food chains. It qualitatively assesses how these practices modify the physical territory and social relations, also analysing how the actors' behaviours and choices are induced by cultural factors. It aims to document and analyse these practices and identifies what enables or hampers transformations towards full agroecological and sustainable food systems in Basilicata. In return this analysis can enrich the intersection between agroecology and agroecology urbanism, towards an agroecology territorialism. This paper briefly outlines the reflections that led us to want to extend the visions of an agroecology urbanism to rural, inner and mountain areas. Being the research at an early stage, we focus on the methodology for mapping the agri-food practices and we close with some openings and ongoing research questions emerging from initial activities (exploratory interviews, visits and context analysis).

Keywords: agroecology, agroecology urbanism, territorialism, farm practices

Introduction

The sustainability of today's food systems, due to an increasingly well-documented series of interconnected negative impacts, is increasingly called into question. Industrial agriculture is one of the key drivers of the current crisis, but as Gliessman (2015, 1) says "it is also an arena of potential solutions". Agroecology emerges as an alternative paradigm to the corporate agri-food regime, to radically transform the structures that govern it - from food production systems to the socio-political and cultural systems through which humans conceive food and organise the way they eat in order to build a sustainable food system without increasing social or territorial inequality (Gliessman, 2015; de Molina, 2020). The evolution of agroecology and its application increasingly reveals its transdisciplinary nature by combining a science that emphasises the co-creation of knowledge; a set of practices that focus on the development of operational models using natural systems and processes; and a social movement that supports rural communities, food sovereignty, social justice and the preservation of local knowledge and culture (Wezel et al., 2020).

By bringing together political agroecology and urban food planning, Tornaghi and Dehaene (2021) argue for an alternative form of urbanisation and urban planning, non-extractive and regenerative, called "agroecology urbanism" which deeply embrace equitable sustainable food production. A radical reconfiguration through which a post-capitalist imaginary can emerge, capable of transforming the spatial relations, economic values, and planning processes of capitalist urbanisms (Dehaene and Tornaghi, 2021). Based on these assumptions, we have embarked on a research project that starts by mapping and reflecting on a series of agri-food production practices in various settlement areas in Basilicata, which promote alternative forms of food production, processing, and distribution, operating mainly outside the logic of large-scale distribution. These practices are based on organic agriculture, traditional cultivars, social ethics, environmental sustainability, and animal welfare representing either old practices resisting transformations (i.e. transhumance), traditional farming with a contemporary twist or new endeavours, generally by young farmers. Although the peasant production model (van der Ploeg, 2008) has not been completely overtaken by capitalist agriculture, the agricultural landscape of lowlands has been nevertheless transformed by intensive production.

This research, still in its early stages, is at the intersection of different paths, experiences (including practical and activist ones) and projects including the Matera Food Atlas. We decided to collaborate in documenting and systematically analysing the agri-food practices each of us is exploring. Additionally, we aim to examine the intersection of food planning and agroecological urbanism in a regional context classified as rural. The programmatic intent is to move beyond the city-countryside dichotomy and envision an agroecological re-

territorialization that views the settlement system as a cohesive whole. Contemporary rurality calls for complexity and settlements (understood as the set of physical artefacts, territorial endowments and human and inter-species relations that develop in a given place to allow human habitation) in Basilicata cannot be strictly divided into rural or urban. Involving farmers, with the valorisation of their empirical knowledge and social networks, can allow for a generative encounter of practices and knowledge, concretising the idea of a renewed relationship, both social and spatial, between city and countryside, between 'those who grow food' and those who 'consume food'.

We ask ourselves: What strategies are implemented by these practices to contribute to agroecology? What kinds of social and spatial relationships, networks, and identities emerge? What factors facilitate/hinder the adoption of an agroecological approach in Basilicata? What insights can we gain to guide agroecology urbanism and territorialism? [fig.1] Title_Arial 10 pt. Please notice that we're using "AESOP2024_caption" character style. Provide a caption, and short description if needed. Source: if the image is a personal drawing, use "elaborated by the author". If you used some data, add ", from" and write data sources you used.

Overview of the Basilicata region

Basilicata (also called Lucania), is a region in the South of Italy, it covers about 10,000 km2 and is predominantly mountainous (46.8%) and hilly (45.2%), with modest flat areas (8%) in the river valleys and south-eastern coastal plain. The population density is about 55 in/km2 and the region is predominantly rural. Its morphology makes it a land with an infrastructure deficit but with a great endowment of natural and environmental resources; a land with a dramatic demographic decrease and a weak urban framework made up of 80% mountain centres with fewer than 5,000 inhabitants and only two urban poles, Matera and Potenza.

The regional economy shows a marked specialisation in the agricultural sector which absorbs 10.1% of the workforce, compared to a national average of 3.6 per cent (2023). The contemporary structure of Lucania's agricultural landscape sees a prevalence of arable crops, followed by agrarian woody crops and permanent grassland. A significant fact is that organic farming accounts for about 22% of the Utilised Agricultural Area (2022). In recent years, the sector has been growing, especially thanks to the recognition of 19 PDO and PGI products and the emergence of forms of food and wine tourism.

The Lucanian agrarian landscape, formerly characterised by small peasant properties with promiscuous and diversified crops grafted between large feudal properties, underwent a radical transformation from the 19th century onwards, culminating in 1950 with the launch of the Agrarian Reform. It changed the land order in favour of small and medium-sized properties and restructured the territory by creating infrastructures, networks and different types of new rural settlements, with the aim of improving peasant living conditions and promoting regional economic development. This new territorial model placed Basilicata at the centre of numerous sociological, anthropological and urban studies, because it was a symbol of the peasant world with which modernity was unable to deal.

The analysis of statistical data reveals a fragile economic and agro-production system when compared to the national and European context. However, explorations of the territory reveal the existence of a complex heritage of knowledge and practices, which over the centuries have been perfected in relation to changes in the living environment.

Concerning agroecological experiences in Basilicata, three initiatives are of interest. The AgroforSyLL (Ciaccia et al., 2021), implemented in the Metapontino area - an interactive laboratory based on the introduction of diversified agroforestry systems, which involves organic farmers, research centres and other actors in an action-research process. The Agro-ecological District of Murge and Bradano, between Apulia and Basilicata - a recently established network of farms, organisations, and citizens that aims to define a new agro-ecological territorial management model, based on sustainability and participation. The Community of Food and Biodiversity of the Pollino Lagonegrese, the first of its kind in Italy, which aims to protect and enhance agri-food biodiversity, traditional local culture and the rural landscape and to halt depopulation trends.

Towards an agroecology territorialism

Agroecology urbanism advances an imaginary for a world that is not organised according to the urban-rural dichotomy, that is not the formal translation of the political economy of capitalist urbanisation, and that leads to decolonising the field of urbanism (Dehaene and Tornaghi 2021). These assumptions oblige us to extend these reflections to rural territories. The urban-rural divide has dominated for a long time and reflects the inability to conceive the two dimensions as part of the same issue. A crack in perspective arrived in the second half of the last century, with the decline of the factory-city model, which triggered processes of economic and spatial transformations that also involved the rural dimension. The advance of capitalism incorporates and transforms local production systems in a systemic logic that proceeds along two trajectories: re-agrarianisation and de-agrarianisation (Uleri et al., 2023).

The former mainly affects the fertile plains (in Basilicata the Metapontino area), introducing new production techniques, practices and technologies, sweeping away traditional agrarian systems and biodiversity. The aim was to stimulate the economy of scale, specialisation, and integration with the system of processing and large-scale agro-industrial distribution. It sees an increased flow of human and economic resources to agriculture, vertically controlled and unevenly accessed and distributed (ibid.). The latter mainly affects mountainous and inner areas, and is characterised by an outflow of resources towards non-agricultural activities and non-rural areas. This is the case of the abandonment of pastures, mountain agriculture, and small villages in the face of the growth of lowland industrial poles or the conversion of peri-urban agricultural land to support urban expansion. In the case of Basilicata, these dynamics translate into a progressive contraction of villages in favour of the two main cities.

These processes of marginalisation are only relatively dependent on absolute physical or territorial disadvantages, but rather on the effects of a development model centred on plains, growth, resource exploitation, industrialisation, specialisation, standardisation of the production process, and centralisation of functions and powers. Escobar (2002) recognises a fundamental role for planning, and more specifically town planning and the science of urbanism in bringing the Fordist order to fruition. Both the liberal-capitalist and anti-capitalist traditions have interpreted development in positive terms, questioning rather how to plan the economic and social growth of a given territory or community. Even in the reformist version of democratic urbanism, which has historically assumed the goal of rebalancing between the productive factors of capital and the reproductive factors of labour force by redistributing profit through services on the territory, the 'territory of the inhabitants' does not appear (Magnaghi, 2017). This planning model impacts on the material and immaterial deterritorialisation of places, and the expropriation of people from the possibility of controlling processes and resources fundamental to their lives, such as the allocation of food. As Escobar (2002,146) argues that "the practice of planning inevitably requires the normalisation and standardisation of reality, which in turn entails injustice and the erasure of difference and diversity". In its most widespread manifestations, it has denied the integration of different functionalities, led to the separation of production and consumption, and obscured the possibility of alternative trajectories of emancipation.

The developed territories are thus contrasted with the underdeveloped ones, identified with the Global South, Southern Italy, rural areas, inner areas, and mountains not associated with winter tourism, which become the object of planning to bridge the gap. In Italy, this process of marginalisation, rediscovery and new development is well exemplified by both inner and mountain areas. These two 'categories' are not only two realities that do not coincide geographically, but are two concepts that come from different schools of thought (Dematteis, 2014). When referring to mountain areas, we exclude the Alps gentrified by winter sports, and the mountain-city. Hills and mountains have been the protagonists for centuries of a plural and variegated territorial evolution. While in pre-industrial times a relative self-sufficiency of these areas was accompanied by a certain dependence of the city on them (for mining, agro-forestry and energy resources), this relationship was later reversed. With the enlargement of markets (for materials, energy, labour), cities become increasingly independent from their hinterlands,

while the latter increase their dependence on cities, especially in terms of services, investments and employment (Dematteis, 2014).

In recent times, rural space, as well as inner and mountain areas, started to be perceived differently, beyond their capacity to satisfy the cities' demand for primary consumption, and become places for the production of sophisticated goods. They are praised for their specific resources (preserved more than in other contexts), their capacity to produce diversity, to offer agri-food assets, settlement structures, water quality, energy, biodiversity, culture and positive externalities. While looking with renewed interest at these areas, both the dominant economy and planning do so primarily in function of the city: as a place of entertainment and economic opportunity (celebrating the 'vocation' of tourism and local products); as an uncontaminated place and reserve of resources to be preserved for the consumption of an impoverished urban territory (exalting its ecosystem services); as a counterbalance to the urban and the loss of a rural tradition (glorifying abandoned villages, making them museums or places of entertainment), struggling instead to recognise a political and cultural value to the human presence on highlands (Varotto, 2020). Recently, Another need has emerged, that of energy, which involves both agricultural production and rural areas: from biomass directed to the production of biofuels or biogas, to the presence of wind turbines and ground-based photovoltaics. Beyond the economic benefits, these structures influence the land use and modify agrarian settings which in turn can generate forms of socio-environmental injustice with respect to the agricultural world and rural contexts (Scotti, 2024).

Nevertheless, in this panorama, emerge approaches that recognise the need to recover the heritage of traditional agronomic techniques, the peasant wisdom and local cultural legacies. The multifunctional approach of the primary sector becomes the new frontier of rural development, referring to the intention to broaden the range of goods and services offered, including non-agricultural activities, in order to vary income sources. The Italian strategy of farm diversification (especially with agritourism) seems not only to have anticipated the new European Green Deal strategy, but by integrating agricultural practices with ethical and social aspects through the involvement of farmers and local communities, it seems to act as a precursor to agroecology (Gargano et al., 2021). The district approach for planning local agri-food systems is also emerging, responding to the need for place-based development policies, based on establishing strong cooperative relationships among geographically close areas, involving different actors in order to retain and expand local added values.

For our reflection, appears useful to explore the 'ecoterritorialist' approach, which contrasts hierarchical centre-periphery relationships by proposing bioregional models capable of respecting and regenerating the ecological ecosystem and hydro-geo-morphological balances of settlements; physically, functionally and symbolically reconnecting urban spaces to the surrounding environmental systems and agro-forestry territories; defining a new idea of solidarity-based and non-hierarchical urbanity, promoting local communities and forms of self-government of production based on the care and reproduction of territorial heritages (Magnaghi and Marzocca, 2023). The complexity of the concept of the (urban) bioregion, as proposed by the territorialist school in relation to food systems that is still in evolution, appears more inclusive than the reductive ways in which it has been considered by City-Region Food System theorists, and by the many processes of building local and urban food policies (Dansero and Dematteis, 2023). What emerges from the intersection of food planning and ecoterritorialism is the identification of the agri-food basin scale (foodshed) as the most appropriate, defined not so much by administrative boundaries as by bioregional ones. New concepts are thus emerging, such as that of agro-ecological territorial systems based on new principles. The farms and the farmers become the territorial garrisons of the principles of care and regeneration of patrimonial resources and the privileged sphere of profound ecological innovation (Bocchi, 2023) in tune with van der Ploeg's (2008) rural development approach.

Research design for mapping/documenting farming practices

The perspective of farmers and farming communities, who choose to include or reject new standards of practice within their farming system, plays a crucial role in achieving the goals of

agroecological transition (de Molina et al., 2020; Barnes, Thompson and Toma, 2022) This is why we choose to give farmers a central role and use the interview and participant observation as point of departure. Starting from the principles of agroecology (Gliessman, 2015; FAO; HLPE, 2019), we have developed an analytical framework to explore agricultural practices, understood as one of the main manifestations of agroecology (Wezel et al., 2020), which "aims to analyse the full picture of an agricultural system, with all its complexity and interactions, and to do so in a way that does not alienate the farmer's own knowledge system" (Peeters, 2021). In order to carry out this type of analysis, it is important to recognise the heterogeneity of practices and the groups of farmers who implement them, and to ask how personal choices and attitudes, as well as current institutional factors, direct the adoption or non-adoption of ecological practices (Barnes et al., 2022). Simplifying, we can say that farming practices depend on the interaction between internal and external factors.

In order to identify the agroecological potential, the internal factors within the farm itself (see Figure 1) - such as the farmer's choices and inclinations, background, and identity, are first investigated. Considering the farm as the result of the coexistence and interaction of multiple components, its Production and metabolic system, Economic structure and marketing behaviour, Space and territory, Cultural aspects, identity and lifestyle and Socio-political aspects are analysed as constituent parts of the farm itself.

Each of these components represents a set of various topics that may concern, for example, management, production, places and the actors that collaborate in the life of a company. For this, subgroups have been identified, each of them referring to a specific topic, into which the component is broken down. For example, the component of Socio-political aspects manifests itself through the topics of Cooperation & networking, Goods and activities outside market relations and working habits & conditions. Agroecology has a holistic approach for agricultural improvement in the sense of both food quality, territories, and the lives of people and animals. Not only crops practices, but also livestock plays a crucial role in food systems. This is reflected in the livestock' component, also for investigating transhumant breeding practices, which play an important role in Basilicata.

Each topic, in turn, groups a series of criteria that represent the concrete expression of the theoretical principles of agroecology and can be used as a yardstick to evaluate the strategies implemented by the farm analysed. For example, in the component of the Economic structure and marketing behaviour, regarding the topic of Economic activities and revenue, one of the criteria is the High level of diversification of products and activities, coinciding with the agro-ecological principle of 'diversity' or 'economic diversification' (HLPE, 2019). Based on this breakdown and reorganisation of the principles, it was possible to identify issues to be observed and submitted to farmers. The farm analysis is flanked by a deep context analysis, at different scales (macro, meso and micro), as it plays a fundamental role in determining the choices and the way farmers behave. The context is articulated in 4 topics: Territory and human settlements, socio-economic, historical and political, cultural and knowledge, and then further articulated into criteria.

The spatial dimension is a central field of investigation in aur analysis for the way it produces and modifies territories and communities. This close link with spatial design is confirmed by the example of permaculture in which the space component is particularly prominent and can be examined to articulate the close connection between agroecology and territorialism.

Therefore, the Space & Territory component is included in the research framework with the aim of examining aspects relating to the relationship between landscape form, land use and present architecture. The criteria deriving from these topics will make it possible to evaluate how the configuration of the landscape itself influences agriculture and, vice versa; how land use characterises the landscape; how practices allow the preservation, modification or even cancellation of local landscape features; the position and reciprocal relationship between the farmer's house and agricultural structures; the choice of site-responsive architectural solutions, the use of local materials and construction techniques, as well as the use of ecological architecture solutions.

The selection of farming practices was based on the identification of organic or ecological practices in Basilicata as they resonate with agroecology. Subsequently it was decided to make

a selection by taking into consideration: i) the landscape of belonging, with specific geomorphologic and pedoclimatic characteristics, in order to analyse the variability of practices in relation to environmental and settlements characteristics; ii) the type of production, giving preference to farms with diversified production structures specialised in local crops (officinal plants, traditional cultivars, etc.), and farms that practise sustainable livestock breeding; iii) the type of farm/livestock management, including family farming, cooperative structures, young farmers and women farmers, who often introduce innovative and sustainable practices; iv) membership in alternative food networks, networks that promote responsible and sustainable consumption or that valorise local production and biodiversity (Food and Agroecological Districts and Communities) and in democratic and participatory innovation spaces (Living Labs).

In short, our selection of agricultural and livestock farming practices, guided by geographical, productive and social diversity, aims to build a mosaic of experiences that helps us understand the complexity and adaptability of agroecological production.

Figure 1: Analytical framework (farms internal components)

Openings

The research, at its beginning, intends to open a perspective of investigation on an inner rural reality that has been looked in for too long with the risk of the rhetoric of peasant nobility or path dependence, indicating the constraint of a past socio-economic model that prevents and prejudges any subsequent and future choices. If on the one hand "history matters", and that we must look carefully at historical factors, on the other it is not certain that this path will perpetuate fatalistically without the possibility of changing course (Donolo, 2011). The critical study through the lenses of agro ecology of agricultural processes, farmers and the food production system could introduce destabilising factors of a hard-to-die stigma to think that the future depends only on us.

Bibliography

Barnes, A.P., Thompson, B. and Toma, L. (2022) 'Finding the ecological farmer: A farmer typology to understand ecological practice adoption within Europe,' *Current Research in Environmental Sustainability*, 4, p. 100125. https://doi.org/10.1016/j.crsust.2022.100125.

Bocchi (2023) 'L'agro-ecologia come supporto fondativo dell'eco-territorialismo', In *Ecoterritorialismo*. Firenze University Press, pp. 75-86.

Ciaccia, C. *et al.* (2021) 'Organic Agroforestry Long-Term Field Experiment Designing Trough Actors' Knowledge towards Food System Sustainability,' *Sustainability*, 13(10).

Dansero, E. and Dematteis, G. (2023) 'Gli apporti della geografia alla definizione operativa dell'eco-territorialismo. Tra storie disciplinari e geografie indisciplinate del cibo,' in Territori, pp. 51–63. https://doi.org/10.36253/979-12-215-0116-2.08.

De Molina, *et al*. (2020) *Political Agroecology: Advancing the Transition to Sustainable Food Systems*. CRC Press.

Dematteis, G. (2014) 'Montagna, città e aree interne in Italia: una sfida per le politiche pubbliche 10.4458/4526-01,' Documenti Geografici, (2).

Donolo, C. (2011) *Italia sperduta – La sindrome del declino e le chiavi per uscirne,* Donzelli.

Escobar A.(2010) 'Planning', in Sachs, W. (Ed) The Development Dictionary. Second edition. Zed books, pp. 145-160.

Gargano, G. et al. (2021) 'The Agroecological Approach as a Model for Multifunctional Agriculture and Farming towards the European Green Deal 2030—Some Evidence from the Italian Experience,' *Sustainability,* 13(4), p. 2215. https://doi.org/10.3390/su13042215.

Gliessman, S. (2014). Agroecology. The Ecology of Sustainable Food Systems (Third edition). New york: CRC Press.

HLPE (2019) Agroecological and other innovative approaches for sustainable agriculture and food systems that enhance food security and nutrition. A report by HLPE, Rome.

Magnaghi A. (2017) 'Le fondamenta di un'utopia concreta', in *La coscienza di luogo nel recente pensiero di Giacomo Becattini*, Firenze University Press, pp. 1-15.

Magnaghi, A., Marzocca, O., (2023) Una costellazione di saperi per l'autogoverno e la cura dei luoghi come beni comuni. In *Ecoterritorialismo*. Firenze University Press, pp. VIII-XIII.

Peeters A., Škorjanc K., Wezel A. and Migliorini P. (2021) OASIS, the Original Agroecological Survey Indicator System. A simple and comprehensive system for agroecological transition assessment. Agroecology Europe, Brussels: 82 pages.

van der Ploeg, JD (2009) The New Peasantries, struggles for autonomy and sustainability in an era of empire and globalization. Earthscan.

Scotti I. (2024) 'Elettricità agricola: l'agrivoltaico nella prospettiva sociologica', in *Energia e mutamento sociale.* Franco Angeli.

Tornaghi, C. and Dehaene, M. (2021) *Resourcing an agroecological urbanism: Political, Transformational and Territorial Dimensions*. Routledge. pp. 1-11.

Uleri, F., Meloni, B., Piccoli, A., and Elsen, S. (2023). Aree Interne tra Deagrarizzazione e Riagrarizzazione: Giovani Agricoltori e Meccanismi di Ritorno all' "Osso" in Centro Sardegna. Fuori Luogo Journal of Sociology of Territory, Tourism, Technology, 17(4), 171-188.

Varotto, M. (2020) *Montagne di mezzo*. Giulio Einaudi Editore.

Wezel, A. *et al.* (2020) 'Agroecological principles and elements and their implications for transitioning to sustainable food systems. A review,' *Agronomy for Sustainable Development*, 40(6).

PAPER SESSION 1.C
URBAN
AGRICULTURE
PRACTICES

Agricultural practices in French prisons : towards better agro-ecological environments

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Agricultural practices in French prisons:

towards better agro-ecological environments

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Abstract

Urban agriculture (UA) can fulfil a variety of functions from recreational and ecological ones to promoting health or enhancing food security, as attested by an extensive bibliography. In the prison environment, the most recognized functions are: i-improving well-being during detention and ii-foresting prisoners for social and professional reintegration by training. Our study aims to characterise the diversity of forms and functions that UA assumes in prisons. It questions the multiple benefits offered by this kind of projects in this particular context and their capacity to reduce socio-environmental inequalities. Semi-structured interviews with 31 stakeholders enabled us to identify the functions, obstacles, and levers of these projects. The initial results of the survey confirm the multiplicity of functions provided by agricultural activities including food production, even though this is not usually the main function expected. While some products are sold to third parties, in many cases the vegetables and fruits produced are also eaten by the gardeners themselves. This increases the possibilities of deciding which food to eat, enhancing knowledge on its production processes. Paid employment was also identified as a possible function of this kind of projects.
However, access to green spaces, training and even jobs are generally highly segmented in terms of gender, behaviours, and spatial constraints. These activities should not become a source of segregation and exclusion. Consideration needs to be given to the most appropriate layout of existing and future establishments to achieve greater spatial and social justice.

Keywords: Urban agriculture – Greening in prisons - Environmental inequalities – Prison food

Introduction

The deprivation of nature in the prison context can be considered an undesired consequence of sentencing, linked to ultra-functionalist architecture. This lack of greening is often justified for security reasons, as vegetation could be a source of hiding places for prohibited objects, an increased risk of evasion and a reduction in visibility (Milhau, 2014).
However, the existence of green spaces is associated with a reduction in violence between prisoners, towards prison staff and towards oneself (Moran D. *et al.,* 2021). These health benefits of nature observed in prisons are like those perceived in healthcare facilities, but the social perception of the legitimate functions of prisons and hospitals is not the same. In fact, in some cases, it is considered that prison conditions should be minimal and therefore, gardens are considered an undeserved luxury. The physical environment of prisons expresses the penal philosophy of society and authorities, depending on the attended purpose of the prison systems, which can be more oriented to punishment or rehabilitation (Moran, *et al.,* 2018). This may add to the security arguments against prison greening.
These observations concern prison greening in general. The literature regarding gardening practices and agriculture is quite little. Studies have been conducted to evaluate the perceived benefits by prisoners from prison horticultural programs. Impacts in mental health, already observed because of the passive exposure to green spaces, have been associated to the active implication of prisoners in gardening activities, by allowing them to engage in purposely physical activity, being creative and assuming responsibilities (Brown, *et al.,* 2021). Furthermore, these programs showed increased social interaction between prisoners and prison staff, self-confidence, acquisition of new life skills or knowledge (even in those cases were there were no formal courses) and new post-release personal perspectives (Farrier*, et al.,* 2019). This is even more important if one considers that the detained population concern most disadvantaged or unfavorable social situation (at the bottom of the social scale) (Vanneste, 2014) and penal confinement reproduced and reinforced social inequalities and the

social and economic disadvantage (Western, Pettit, 2010). Indeed, the access to green spaces may be used as a reward for good behaviour, and it can also be denied punitively (Moran, *et al.,* 2018). In this context marked by strong spatial and social inequalities, we wonder if urban agriculture practices contribute to the reduction of those inequalities by promoting more liveable and greener environment. We define socio-environmental inequalities as the unequal access to amenities and environmental resources (Emelianoff, 2008). Even if some of these establishments are located in a rural environment, we mobilize the notion of urban agriculture intended as agricultural practices based on functional and spatial links in relation to the (urban) population concerned. The penitentiary centres are functional spatial units, and their design and functioning could be considered as closed living environments.

Our study aims to characterise the diversity of forms and functions that UA assumes in prisons. In the French prison system, there are 3 main types of prison facilities (*maisons d'arrêt, centre de détention et maisons centrales*). Each kind of facility receives different profiles of incarcerated persons, according to their legal status (accused or convicted), the length of sentence and the estimated dangerousness of the inmates, and so security constraints vary among prison types. Our study questions the multiple benefits offered by these kinds of projects in those contexts.

Methodology

Our survey concerns 10 prisons and 6 inter-regional directorates (Rennes, Lyon, Marseille, Dijon, Bordeaux, oversea's mission). The sample of prisons to be surveyed was drawn up respecting the diversity of ongoing cases according to the forms of UA in place (e.g. collective gardens, educational gardens, bees, eco-grazing, farms), as well as the type of establishment (*maisons d'arrêt, centre de détention et maisons centrales*). We looked for a representative sample of the vast diversity of existing situations. This study was based on semi-directive interviews conducted with the various stakeholders (e.g. heads of prisons and service providers, training associations, foundation, etc.) involved in existing UA projects within French prisons. We also interviewed key people (such as research teams[1] and institutional stakeholders associated with the prison administration) who could give us a better understanding of the context. These interviews enabled us to explore certain issues in greater depth, in particular the question of the obstacles and levers involved in UA project. In all, 21 interviews were conducted between November 2023 and February 2024 with 31 people. The data obtained was sorted and analysed through an analysis grid to identify key information on specific subjects regarding all projects (such as forms of urban agriculture, associated activities and functions, outlets for produce, kind of implication of prisoners). As no interviews were conducted with inmates, their views could not be included in the study. However, there were informal exchanges with some inmates during the visits, and their points of views were sometimes reported by prison staff. These sources were considered to complete the analysis.

Results
The data analysis allowed us to identify three main topics relating to the functioning and the potential impact of these projects: 1- the existing forms of UA in prison facilities and their operators, 2- the expected and observed functions of these projects and 3- the access to activities, spaces and food.

Existing UA forms in French prisons
In order to sort the types of existing projects, we based ourselves on a previously developed typology of UA forms (Bertrand et al., 2022). 9 types of UA practices were identified, to which we added 2 food processing activities (bakery and vegetable factory) as in [fig.1]. In fact, the inclusion of these activities in the study is relevant as they offer interesting potential for the

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[1] Interviews were conducted with two research teams, working in the following research areas: prison greening (conducted by Anaïs Heneguelle) and prison food (conducted by Anissa Pomiès). These exchanges and the provisional academic documents they shared with us have given us a better understanding of issues related to our study.

creation of integrated production chains which may have an impact on the prison food system and on skills and knowledge acquired by inmates.

Selected prisons establishments	Educational garden	Community garden	Composting	Bakery	Eco-grazing	Agricultural exploitation	Apiary	Vegetable factory	Vegetable farm	Working integration garden	Educational workshop	Socialising and bonding	Reintegration	Well-being	Job creation	Educational	Productive	Normalisation / responsability	Recreational	Therapeutic	Landscape	Environ. / Food awareness	Remuneration
1		X											X			X			X		X		
2	X			X	X			X				X	X		X	X	X	X					
3		X		X	X							X	X	X					X	X	X	X	
4	X		X			X	X				X			X	X	X	X						
5	X	X	X				X					X					X		X				
6	X											X	X					X					
7		X				X			X					X	X	X		X					
8	X											X					X			X			
9	X		X										X	X									X
10										X					X							X	
TOTAL	6	4	3	2	2	2	2	1	1	1	1	5	5	4	4	4	4	3	3	2	2	2	1

Figure 1: The UA forms on going within the selected prisons establishments and related functions

11 types of UA forms were identified, composed of educational gardens (n=6), community gardens (n=4), composting (n=3), bakeries (n=2), eco-grazing (n=2), agricultural exploitation (n=2), apiaries (n=2), vegetable factory (n=1), vegetable farm (n=1), working integration garden (n=1) and educational workshop (n=1). In most of the 10 prisons surveyed more than one type of these activities take place. In most cases, the same structure oversees various activities. The composting is carried out as a project by itself, not as an auxiliary practice associated to gardening or agricultural production. The educational workshop mentioned offers training in the maintenance and repair of agricultural and gardening equipment, such as lawnmowers and tractors.

The diversity of UA forms observed translates into a variety of operators. The activities are carried out internally, managed by a third party or both. The 7 kinds of structures and respective number of times they were observed are: prison's internal management (n=5), economic integration structure (n=4), training organisation or association (n=4), private company (n=1), agricultural training high-school (n=1), adapted company, specialized in job opportunities for people with disabilities (n=1) and the prison employment service[2] (n=1). The same establishment may also use several operators depending on the activities and projects. For example, prison number 3 [fig.1] manages internally three different activities (apiary, composting and community garden), while a fourth one (educational garden) is run by a training organisation.

The expected functions of UA projects
The surveyed projects are multifunctional, as several functions were reported for each of them. 12 different expected functions were identified: socialising and bonding (n=5), reintegration

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[2] The prison employment service (*Service de l'Emploi Pénitentiaire*) is a public agency attached to the Ministry of Justice and the Prison Administration Departement. Its purpose is to contribute to the integration of inmates and to decrease recidivism by developing work and training in prisons. The prison employment service manages numerous industrial workshops in prisons throughout France. At present, there is only one agricultural activity run by this agency (corresponding to prison no. 7 [tab.1]).

(n=5), well-being (n=4), job creation (n=4), educational (n=4), productive (n=4), normalisation of life in detention and responsibility awareness (n=3), recreational (n=3), therapeutic (n=2), landscape and living environment improvement (n=2), environmental and food awareness (n=2) and remuneration (n=1) as in [fig.1]. As explained before, these expected functions are those expressed by the project managers and not by the participants (the inmates), who could not be interviewed.

Two main groups of functions can be pointed out: well-being (including therapeutic, recreational, and socialising, for example) and reintegration (including reintegration itself but also job creation and educational functions). There was no mention of an expected impact in food practices or nutrition. This absence may be associated with the minor mention of the productive function, which constitutes a group in itself.

In general, the notion of reintegration is not limited to the professional issue. In fact, it is usually mentioned as a wider concept, including social and personal dimensions. Responsibility awareness, in terms of the ability to keep to schedules and carry out planned tasks, is associated with this broader sense of reintegration. Even though a positive effect in later social or professional reintegration is highly expected, it remains difficult to verify, as those responsible for these activities do not monitor the progress of prisoners after their release.

Other than later reintegration and its difficult verification, the expected functions were reached. In terms of job creation and educational function, 196 prisoners (out of a total of 3,836 inmates in 9 of the establishments surveyed, according to the data available) took part in a paid activity, including training and prison employment. This total is composed of 79 agricultural workers, 28 food transformation workers (bakeries and vegetable factory) and 89 paid apprentices.

In minor cases, a gap between expected and observed functions was reported. This discrepancy was more about unexpected positive results, rather than non-attained functions. Two unexpected results were reported: the integration of a non-French-speaking public (mentioned in two cases) and the effects on mental health (mentioned by a project leader who, unlike others, had not foreseen this result).

The reported functions confirm what the analysis of UA types suggested: most of the activities observed are serviced-oriented and non-profitable UA forms, as production is not an end in itself but rather a support for other activities. Only three existing projects may correspond to the commercial and productive family of UA forms: the vegetable farm and the two agricultural exploitations. The vegetable farm supplies partially the vegetables and fruits needed for food production in the prison's kitchen. No external economic profit is obtained through this farm; its belonging to this group is therefore relative. As for the two agricultural exploitations, both of them represent exceptional cases: these two prisons, located in rural zones, own each large amounts of lands (97 and 1400 hectares respectively), enabling a different approach to agricultural production.

The expected functions of UA projects have a key impact on the design and management of activities. Indeed, the expected functions are part of the decision-making process, as well as the financial, spatial, and human resources available.

Socio-environmental inequalities in French prisons
As anticipated in the introduction, we investigate the UA contribution in reducing the socio-environmental inequalities. According to the data analysis, we identified 4 main amenities and resources provided by UA projects: i-access to green open spaces, ii-access to food and/or ornamental plant, iii-knowledge and know-how in agriculture production and/or transformation and iv-economical resources. The authorized access to these amenities and resources is very variable among the different establishments, as well as the exposure time. We've identified some factors that influence both the physical and visual accessibility to the areas hosting these projects and the selection criteria for participating in UA activities and consequently access to resources.

As a first point we want to underline that the right of entry to green open spaces could be both physical and visual. This accessibility is different depending on the establishments. The least inclusive configuration it's the one where the agricultural projects are located outside the jail walls or far from the prison living area. In these cases, usually oriented towards production or

training, the prisoners are escorted to the sites and therefore it is physically accessible only to participants in training or employment programs. However, these areas could be visually accessible to inhabitants who live nearby. This arrangement is found usually in the detention centers located in rural context where the establishments own an important agricultural area (between a few hectares and several hundred). Another possible configuration is that in which physical admission is reserved for selected inmates, but visual access is possible during walking hours within the courtyarded or from the cells overlooking on that yard. This configuration, found above all in prison number 6 [fig.1], is associated to collective garden or training plots that required a less cultivated area than farms. In these situations, other people can benefit from those spaces (even just visually). For some prisoners *"it is a chance to get a cell that overlooks the garden"*, related the director of development of association X. Another observation was "*What comes up very often is the soothing side of nature in an establishment, whether people go gardening or not, so for all those who have seen it in the garden, it is calming, there is a lot of supervisors who told us, ….., as soon as there is a garden, in fact, there is no more waste sent through the windows".* In rare cases, some collective gardens are accessible to all even if cultivation remains in the hands of a few. The duration of exposure also differs according to the kind of project and the range of prison sentences. For example, it could vary between a few months (e.g. from 2 to 9 months often in the case of training activities) until the length of the sentence for jobs or collective gardens. The duration of exposure also varies according to the daily time spent gardening or farming. If some establishments focus on autonomy and responsibility allowing the prisoners to spend the whole day in the garden,; other establishments (especially when those activities are managed by a third-party like an association or external companies) limited the schedule to 6 hours per day while the trainers are on site. The possibility of being outdoors is a motivation, as one prisoner states "*We have an hour's walk every day, but otherwise we're locked in and it's not good".*

The candidate selection criteria vary but some recurring factors are*: i*- disciplinary criteria (the "good behavior" is often one of the acceptance criteria for participating in activities); ii the length of the sentence or incarceration time which must be compatible, especially when it comes to training. Other factor that can be discriminatory is gender. Mixing the masculine and feminine population is often considered a cause of incidents; for this reason, a predilection for men (who are also largely the most numerically represented category) is often done. In some establishments, women garden in their walking courtyards, but these initiatives remain a very small minority and secondary to men's activities, which include productive projects and also training.

One of the prison authorities interviewed focused on the objectives of the detention period, which is precisely to prepare for the exit from both an emotional and professional point of view. Providing occupation allows avoiding frustration and violence. The training courses are interesting alternatives to prison jobs. They do not have commercial objectives. In fact, these activities are financed by the administrative regions within a specific budget. They also have more flexibility to adapt to sentences of varying length, however not all training is qualifying. 9 establishments out of the 10 interviewed offer paid training, but only two of them provided qualifying training. Moreover, the requirements for participation in qualifying training, in particular mastery of the French language, exclude certain audiences (including non-French speakers, who nevertheless benefit, according to declarations, from these activities precisely to improve their knowledge of the language). Among the establishments, only two had job trainings directly oriented to market gardening or livestock production. The others were oriented to food processing (e.g. bakery). It is still unclear whether these trainings have a real impact on the reintegration of prisoners and warnings are mixed. A trainer affirmed that "*some people discover an interest, wishing to continue working or training even more in this field afterwards*." The assertion should be balanced with the statements of the director of association X that affirms "*Just because there are needs and it's easy to get them, doesn't mean that prisoners want to go into these jobs, which often don't pay very well."*

Regarding food access, some context about the French prison food system is necessary. In fact, there are no communal dining halls in French prisons: meals are served in the inmates' cells. Food is prepared in the prison kitchen and then distributed. Cooking and distribution

service are source of in-prison jobs. In addition to the food provided by the prison food service, inmates can prepare their own meals in their cells. Food supplies and basic cooking equipment can be purchased from the prison canteen. These cooking possibilities are valued among prisoners. We observed that inmates participating in UA projects (as paid workers or trainees, or self-committed gardeners) were allowed to appropriate some of the fruits and vegetables produced for their own direct consumption in 7 cases. However, the flow of products is always controlled my guardians. The prisoners are not allowed to move around with large bags, to avoid hiding tools or other things, as stated by a prisoner *"If it is a little aromatic, ….as long as it is not considered dangerous or noisome, …afterwards, it's the same, it depends on the supervisor who will tolerate it or not"*. Even limited circulation with other prisoners occurs as he says "*It's rosemary and bay leaves. When they* [other prisoners] *try that, they make a tomato sauce, and then they ask us for more.*" In one particular case (prison no. 9), gardeners were not allowed to return to their cells with part of the production, as the educational garden was located outside the secured perimeter and so authorities feared the possibility of inmates concealing among the production prohibited materials. For many of the inmates involved, the possibility of tasting what they have produced is an important reason for their engagement in these activities. The director of prison no. 9 affirmed that the prohibition of consuming their production was a source of frustration for the gardeners.

In 5 of the establishments analyzed, the productions partially supply the prison kitchens or staff restaurant. Accordingly to the expected functions observed, where production itself is minorly stated and addressing food necessity is not even mentioned, the quantities intended for this internal consumption remain low, unstable and not precisely quantified. However, even in this case, they represent indirect benefits for a greater number of people, beyond the participants.

Discussion and final remarks

The data collected shows that the UA projects in French prisons are characterized by a wide variety of types, functions, and devices. While on the one hand they allow access to resources and amenities, unfortunately they are not widespread and not everyone can enjoy them. The prison population that has access to UA projects vary between ten and thirty percent of the total population of the surveyed prisons. Furthermore, the access to green spaces, training and even jobs are generally highly segmented and limited. First, women's lower participation is associated to their minority among prisoners (around 4% of the total prison population). Secondly, eligibility depends strongly on good behaviour. This may be questioned, on the one hand in the name of democratizing the benefits of urban agriculture. On the other hand, there seems to us to be a paradox: the subjective benefits of these activities, which are associated with a reduction in violence, are not accessible to the prisoners who may need them most. But the participation of the latter would require a reinforced support, which is not necessarily possible in most prisons.

Lastly, there is a strong spatial constraint for these projects linked to physical accessibility, which also affects segmentation. Security requirements have a major impact on the choice of sites and the feasibility of projects. These activities should not become a source of segregation and exclusion. Moreover, consideration needs to be given to the most appropriate layout of existing and future establishments to achieve greater spatial and social justice. There are ongoing projects rightly trying to limit these situations (e.g. allowing prisoners to circulate within the open spaces, some of which have vegetable gardens for a longer duration).

It is also true that some establishments are old and the integration of those projects it is done by adapting to existing space and resources (humans, economical,…).

There are few experimental projects under consideration that aim to integrate agriculture into prisons, both to create spaces for sharing and conviviality and to strengthen the links between production and consumption. The integration of agriculture within the establishment could be thought through from a spatial point of view, but also from a social one.

The link between agriculture and food supply seems an important aspect to be discussed. In fact, the potential impact of UA activities is not generally considered by the projects' promoters, as it remains a secondary issue and not the main purpose. In the current context, where society

is increasingly concerned about quality food access and production, interesting synergies could be explored between these two issues.

This field of study is very promising. More in-depth investigations with inmates could allow a better understanding of the impacts and benefits of these projects and contribute to imagine technique and social innovations to reduce the socio-environmental inequalities. A comparative approach would also be desirable to understand the implemented or planned strategies of other countries facing with these important issues.

Acknowledgements

Bibliography

Bertrand, L., Giacchè, G., Aubry, C. (2022), "Développer des projets d'agriculture urbaine avec la méthode Meth-ExpAU®", Editions Quae.

Brown, G., Bos, E., Brady, B. (2021), "Building Health and Wellbeing in Prison: Learning from the Master Gardener Programme in a Midlands Prison", *Issues and Innovations in Prison Health Research*, Palgrave Studies in Prisons and Penology. https://doi.org/10.1007/978-3-030-46401-1_7

Emelianoff, C. (2008) "La problématique des inégalités écologiques, un nouveau paysage conceptuel", *Écologie & politique*, 35, pp. 19-31. https://doi.org/10.3917/ecopo.035.0019

Farrier, A., Baybutt, M., Dooris, M. (2019), "Mental Health and Wellbeing Benefits from a Prisons Horticultural Programme", International Journal of Prisoner Health, Vol. 15 No. 1, pp. 91-104. https://doi.org/10.1108/IJPH-11-2017-0055

Ilieva, R.T, *et al.* (2022) " The Socio-Cultural Benefits of Urban Agriculture: A Review of the Literature", *Land*, *11*, 622. https://doi.org/10.3390/land1105062

Laieb, N. Martin, J. (2014) "Introduction", *VST - Vie sociale et traitements*, 124, 9-12. https://doi.org/10.3917/vst.124.0009

Milhaud, O. (2014) "Enfermés entre quatre murs. Les besoins de nature des détenus", Géographie et Cultures

Moran, D., Turner, J. (2018), "Turning over a new leaf: The health-enabling capacities of nature contact in prison", Social Science & Medicine

Moran, D., Jones, P., Jordaan, J. A., Porter, A. (2021), "Does nature contact in prison improve wellbeing? Mapping land cover to identify the effect of greenspace on self-harm and violence in prisons in England and Wales", Annals of the American Association of Geographers

Vanneste, C. (2014) "Pauvreté, précarité et prison : des liens de proximité inéluctables ?", *Spécificités*, 6, 202-220. https://doi.org/10.3917/spec.006.0202

Western B., Pettit B. (2010) "Incarceration & social inequality", *Dedalus. Journal of the American Academy of Arts & Sciences* pp. 8-19

Towards a European Urban Agriculture Policy and Governance Framework. Sharing the Roman experience

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Towards a European Urban Agriculture Policy and Governance Framework. Sharing the Roman experience

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In Rome, Urban Agriculture (UA) is transitioning from an informal practice to one progressively embedded in urban policies and informing academic research. With an agricultural area of 58,000 ha. and expertise in urban farming that goes back to Roman times, the city offers endless possibilities to develop UA practices. Traditionally, local communities have been occupying and managing public land to ensure food security across the city. In recent years, UA implemented by grassroot movements has gained the attention of local politicians for its potential to tackle urban sprawl and soil degradation while enhancing social inclusion. This new understanding of the multifunctional nature of UA led to the development of local policies and governance models fostering active citizenship and community cohesion. Alongside policy recognition at the local level, UA practices prompted Rome to participate in EU funding programmes. Under FUSILLI project, the City implemented a multi-stakeholder Living Lab to transition towards a sustainable urban food system. FUSILLI accelerated the creation of a Food Council to support the City Assembly in developing a food policy that embeds UA practices in all the stages of the city's urban food system. Roman UA practices – which gained the City the award of Good Practice City in 2017 - are currently being replicated in other EU cities as well as non-EU cities through URBACT and the International Urban and Regional Cooperation (IURC) Programmes. In particular, the URBACT participatory methodology was adapted to Barranquilla (Colombia) in Latin America under the IURC programme. The IURC pilots being successful, received further funding under GenerACTOR. Communities in the transfer network cities are empowered to make use of degraded public land for UA purposes. This is shaping urban food planning as a bottom-up and participatory process. Rome is also playing a pivotal role in the European Forum on Urban Agriculture (EFUA) - a forum carrying out extensive research on types and benefits of UA as well as governance models. EFUA will also provide policy recommendations for mainstreaming Urban Agriculture into European, regional and local policies. By participating in the AESOP2024 Conference, the City of Rome aims to share its UA expertise and inform on challenges encountered when implementing its management model of urban gardens across the city. At the Conference, Rome will also advocate for a European multi-level policy and governance framework to advance UA through the European climate agenda. #UrbanAgriculture #FoodSystem #UrbanCommunityGardens #FoodPolicy #RomaCapitale #FoodCouncil

WHY advocate for an EU Urban Agriculture dedicated policy

More than half of the world's population lives in urban areas, predicted to rise beyond 70% by 2050. UA is a subject of growing interest: it provides short supply chain products, addresses climate change, is a source of environmental, social and health benefits, and economic opportunities. Challenges such as food availability, accessibility and affordability, risk of flooding, and climate change can be addressed by both Nature-based solutions (NbS) and UA, developing a 'narrative' that situates UA as an effective NbS, which is a fundamental step to strengthening and upscaling both successfully.

At AESOP Conference, Rome shares its UA best practices, while advocating for an EU multi-level science, policy and governance framework. In Rome, UA is transitioning from an informal practice to one embedded in urban policies and research. With an expertise going back to ancient times, the city offers endless possibilities for UA practices[1]. Traditionally, the communities have been occupying and managing underused public land to ensure food security, while in the past 40 years UA in Rome implemented by grassroot movements gained the attention of institutions[2]. A low-cost practice to tackle urban sprawl, soil degradation, urban resilience, sustainable regeneration and climate change, while enhancing social inclusion and sense of belonging. This new understanding of UA's multifunctional nature led to policies that foster cooperation between citizens and local government as a model for innovation and community cohesion[3].

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[1] Marco Tullio Cicerone (63-44 B.C.), "Si hortum in bibliotheca habes, nihili deerit", in *Epistolae ad Familiares* 9 (4). Translation: "If you own a library and a garden, you have all you need in life". https://aforismi.meglio.it/aforisma.htm?id=13dcd

[2] In 1978, Rome's first City Conference on Agriculture, with the cooperatives not yet regulated: *Agricoltura Nuova* and *Co.Bra.Gor*.

[3] In 2015, the City of Rome approved and adopted the first Regulation for the Management of Urban Gardens: https://www.comune.roma.it/web-resources/cms/documents/Delib_N_38_17.07.2015.pdf . This document is now being updated to reflect the most recent knowledge and expertise in the field: ROME REGULATION FOR THE MANAGEMENT OF URBAN GARDENS: THE ULG ENGAGED IN DRAFTING THE UPDATED VERSION! | urbact.eu.

UA practices drove Rome to participate in EU funding programmes focused on research and innovation (R&I) as well as on good practices' exchange. *Risorse per Roma* - the operative 'City Agency for Urban and Landscape Planning' - has been working since 2010 on EU projects with a particular focus on UA, bottom-up participatory processes and citizen science projects such as the 'Urban Community Gardens' (UCGs), often as Lead Partner (LP). In 2017, 250 lots of UCGs were implemented by SIDIGMED project. In 2017 Rome was awarded URBACT Good practice City[4] and in Yangzhou Expo 2021 the Golden Award for Outdoor International Gardens[5], thanks to two of our outstanding EU citizen-driven projects, as LP: RU:RBAN[6] and RU:RBAN Second Wave[7], proving that cities can benefit from an EU multi-level policy and framework to promote community-driven governance models and integrated and systemic UA policies. In 2024, we are partners in the projects EFUA[8], FUSILLI[9], GenerACTOR[10], and stakeholder partner in INCREASE[11], all focused on AU.

WHERE - the *Agro Romano*, the City and Europe

Rome is a modern metropolis with 3,000 years of history, hosting 2,8 million inhabitants on a surface of 1,300 sqkm: 2,235 inh./sqkm alterning high-density areas with large green spaces, 86,000 hectares of green areas - 67% of the entire surface. Historic gardens, parks, natural reserves, and *Agro Romano*, the agricultural land and landscapes celebrated worldwide by artists and writers from the *Grand Tour* since the 17th century. Plus, Rome is in the main European country for biodiversity: Italy[12].

Indeed, the city stands among the largest agricultural municipalities in Europe, dedicating 45% of its land to agriculture: 58,000 hectares, hosting more than 2,500 farms[13]. A sector mostly made of SMEs and growing, +12.1% areas since the year 2000, represents a considerable basin for the production of food, pastures for extensive livestock, and related services[14]. A contribution to healthy and sustainable nutrition as 25% of the food sold is local, where quality products characterizing the local cuisine stand-out[15]. Rome, first in Italy for organic food sales, provides full school canteens' catering services, cooked daily on the premises, exclusively using organic products, for 140,000 children[16].

In the 67 Municipal food markets, 12% of the stalls are held by producers, 33-and constantly increasing-are the organic greenmarkets managed by the farmers' associations[17]. As 'alternative distribution experiences' we list 55 Solidarity Purchasing Groups (SPGs) and box-scheme experiences *GAS*[18]; increasing e-commerce platforms; more than 740 farms selling through neighbourhood stores and/or on their premises; alternative short supply chains like community supported agriculture CSA and *DOM9*[19]. Nevertheless, supermarkets are 700: an overwhelming majority.

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[4] 'Resilient City Award' at the URBACT City Festival in Tallinn, September 2017.

[5] International Horticulture Expo 2021 Rome space showing the RU:Rban project good practice transfer https://aiph.org/floraculture/news/expo-2021-yangzhou-harmony-between-man-and-nature-in-the-middle-of-a-pandemic/

[6] RU:Rban URBACT EU project, 2018-202, LP Rome. Transfer network with the cities of Caen (FR), A Coruna (SP), Kracov (PO), Loures (PT), Thessaloniki (GR), Vilnius (LT) https://urbact.eu/networks/rurban

[7] RU:Rban Second Wave project, 2021-2022, LP Rome. Transfer to Algeciras (SP), Alexandroupolis (GR), Carlow (IR), Split (HR).

[8] EFUA - European Forum for a Comprehensive Vision on Urban Agriculture. H2020 project 2020-2023. 11 partners, LP RHEINISCH-WESTFAELISCHE TECHNISCHE HOCHSCHULE AACHEN. https://cordis.europa.eu/project/id/101000681

[9] FUSILLI - Fostering the Urban food System Transformation through Innovative Living Labs Implementation. H2020 project 2021-2024. 34 partners, LP Cartif. https://cordis.europa.eu/project/id/101000717/it

[10] GenerACTOR – Community gardens as a GenerACTOR for good governance, active citizenship and participation. Project Co-funded by EU 2022-2024. 5 parters, LP *ANCI Lazio*. https://generactor.info/brite/

[11] INCREASE - Intelligent Collections of Food Legumes Genetic Resources for European Agrofood Systems. H2020 project 2020-2026. 28 participants worldwide, coordinated by UNIVERSITA POLITECNICA DELLE MARCHE.

[12] https://www.comune.roma.it/web/it/dati-e-statistiche.page.

[13] The City Government itself holds the property of 2 large peri-urban farms: *Castel di Guido* and *Tenuta del Cavaliere.*

[14] Multifunctional and organic experiences and social R&I practices increasing: 52 in Metropolitan Area, 5,000 workstations in the *Lazio* region (7th Census of Agriculture, 2023): https://www.crea.gov.it/web/politiche-e-bioeconomia/-/l-agricoltura-nel-lazio-in-cifre-2023

[15] Though 40% from Southern Italy, 20% from North Italy, and 15% from abroad. 15 products are those certificated D.O.P (8) and I.G.P. (7). https://www.unimercatorum.it/evento/agrifood-roma-2030---presentazione-piano-agroalimentare-di-roma

[16] From kindergartens, primary and middle school: https://www.comune.roma.it/web/it/scheda-servizi.page?contentId=INF32078

[17] Mostly by the *Campagna Amica* network of farmers, co-founder and member of the international World Farmers' Market Coalition. /

[18] Gruppi di Acquisto Solidale - https://e-circles.org/reti-distretti-economia-solidale/rete-gas-lazio - https://www.gasroma.org/

[19] https://www.semidicomunita.it/ and https://www.comune.roma.it/web/it/municipio-ix-progetti.page?contentId=PRG32365

Food waste prevention is one of the pillars of the current administration's programme: in fact, the City Council Department was re-named in 2021 'For Agriculture, Environment and Waste'. Many are the initiatives of NGOs and citizens associations dealing with ensuring a second life for raw and cooked surplus, redistributed to needy people[20].

WHEN – projects, actions and acts in Rome

Since 1977, very active citizens have pushed local governments in bottom-up processes, resulting in laws and regulations related to UA, soil preservation, assignment of public land to farmers, and for the creation of UCGs. Associations, committees, organizations, cooperatives are the wealth of Rome's significant changes[21]. Before the pandemic the City Government made improvements in the UA and food policies [22]. In 2019 a 'Promoting Committee', participated by 100 stakeholders representing the food chain and research bodies[23] , brought forward the proposal for 'A Food Policy for Rome': on April 27th 2021, after a demanding bottom-up advocacy process, the proposal was approved by the City Assembly as 'Resolution for the Food Policy', nr 38/2021[24].

WHO - foodscape, processes, and policy makers

UA contributes to a governance model for sustainable development, healthy nutrition, environment protection, brownfield recovery and reuse, social cohesion and poverty-fighting[25].

The Urban Community Gardens (UCGs) are active citizenship's no-profit initiatives, one of the most innovative and interesting examples of governance of urban commons. Rome counts today more than 3,200 plots in the edible UCGs, a crucial aspect of urban metabolism and social justice, providing self-produced food support for 60,000 families. Since the approval of the City Regulation for UCGs 38/2015 (again, a bottom-up process), 20 of the 218 existing experiences of UCGs have been officially recognized and regulated by the dedicated City Office [26]. An established network of UCGs, *Orti in Comune*, shares needs, know-how, proposals, training, and created the new managing role of the 'Gardenizer'. The capacity of citizens in self-managing UCGs is a valid multilevel tool in a low-cost strategy to help the local government to fight social exclusion and poverty, implement citizen involvement and empowerment, recover abandoned areas, fight erosion and urban sprawl, mitigate climate change, strengthen urban resilience and regeneration, supply urban spaces (*piazze*), promote environmental education, improve the quality of life by ensuring sustainable livelihoods.

Interreg SIDIGMED was an EU cross-border cooperation project for the Mediterranean- involving Rome- aimed at fighting social exclusion and poverty through improved governance and dialogue[27]. Groups at risk of social exclusion were provided with opportunities to reach self-sufficiency through UA. New governance systems were developed for pilot sites, involving authorities, associations and stakeholders, with design and management being key factors of success and sustainability.

The management model for UCGs led Rome to coach 10 EU cities through the 'RU:RBAN' and 'RU:RBAN Second Wave' projects within the URBACT Program, providing citizens with the skills to organize and manage UCGs through a 'learning-by-doing' methodology to enhance decision-making,

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[20] please find a non-exhaustive map here: https://www.dinamopress.it/news/la-mappa-della-solidarieta-roma/

[21] Source for land movements: https://www.mattatoioroma.it/mostra/roma-periurbana-risorse-agricole-territorio-realta-sommerse

[22] The *Roma città da coltivare* program in 2014 launched a public call on 100 ha for young farmers; The Charter for the short supply chain and agricultural multifunctionality, Resolution 351/2015 (adhesion to MUFPP); In 2015, the Regulation for UCGs; The Regulation for Farmers Markets, Resolution RC / 18617/2017; The Plan for the reduction and management of post-consumer materials 2017-2021 (Resolution 47/2017); The *Roma Resiliente* project: Rome selected among the first 33 cities to join the '100 Resilient Cities program'.

[23] https://www.politichelocalicibo.it/wp-content/uploads/2019/10/Una-Food-Policy-per-Roma.pdf

[24] https://www.comune.roma.it/web-resources/cms/documents/Deliberazione_Assemblea_Capitolina_n._38-2021.pdf

[25] UA results a strategic tool for a sustainable development in cities and to set the balance between the rural and the urban world. Source https://www.researchgate.net/profile/Flavio-Lupia/publication/273423113_Mappatura_spaziale_dell'agricoltura_ur-bana/links/55007c650cf2aee14b54b838/Mappatura-spaziale-dellagricoltura-urbana.pdf

[26] See https://www.comune.roma.it/web/it/dipartimento-tutela-ambientale-uffici-e-contatti.page?contentId=UFF29719

[27] Interreg SIDIGMED 'Social and Intercultural Dialogue through Governance for Local development', 2013-2017. 6 partners, LP Royal Botanic Garden with Balqa (JO), Mahdia (TUN), Barcelona (SP), Rome. https://www.idaea.csic.es/me dspring/link/sidig-med-project

trust-building, communication and conflict-management, innovative actions, and citizen training[28]. Reaching a two-fold aim: fighting social exclusion and allowing brownfield recovery. The two projects aimed to raise awareness among administrations on the role of UA as a means for new opportunities of cooperation in urban regeneration and resilience, social inclusion, circular economy. The transfer of the good practice of the LP Rome led to improved governances' capacities[29].

Alongside urban metabolism and urban-rural linkages, urban food system (UFS) is one of the key concepts that can be associated with UA. The H2020 FUSILLI project supports 12 pilot cities in 'Fostering the Urban food System transformation through Innovative Living Labs Implementation' through knowledge sharing and mutual learning[30]. The main objective is to support local administrations in building an urban food policy (UFP) and urban food chart (UFC) to reach an integrated and safe holistic transition towards healthy, sustainable, inclusive, equitable and cost-efficient FSs, in line with the 4 FOOD 2030 priorities. The Guidelines from the 'Resolution nr.38/2021 for the Food Policy of Rome' were the starting point for Rome's LL: Access to resources; Sustainable agriculture and biodiversity; Short supply chains and local markets; Town-countryside relations; Food and territory; Waste and redistribution; Multifunctionality of farms; Awareness on food sustainability; Landscape preservation and enhancing; Planning for resilience. Thanks to FUSILLI, the City and *Risorse per Roma* – both partners in the project - implemented 48 'Policies and Actions' through a brand-new multi-stakeholder 'Living Lab' (LL), engaging and endorsing 250 stakeholders representing more than 3,000 people in decision-making processes[31]. The LL operated for 2 years, on a voluntary basis, on 7 'Thematic Work Tables' (TWTs), chaired by the City Councillor for Agriculture, Environment and Waste cycle, towards an innovative and sustainable UFP[32]. The LL's TWTs met weekly, developed proposals, organized dozens of activities, acted as advocacy body for the work of the hundreds of associations, organizations, committees, charities initiatives in the entire food supply chain. In this complex and difficult city that hosts all sorts - and high numbers - of voluntary and spontaneous initiatives, the main challenge for the Administration is, indeed, in the governance of all these during the hoped-for transition. A goal impossible to achieve without the input and support from the citizens.

FUSILLI LL established from its early stages a fruitful synergy with the City Government settled in November 2021, and gained the trust of stakeholders. Overcoming mutual mistrusts, and the 'physiological' indolence for innovation. Pursuing the project's goals through listening to stakeholders' needs and proposals. Choosing immediately effective tactics to obtain quick and clear results, embracing stakeholders' initiatives on a day-by-day basis, working on C&D, tailoring the program to the 'real city' through 'inductive' paths, and only later pursuing the construction of an 'organic strategy'. Actions were implemented taking advantage of both the opportunities suggested by stakeholders and the Administration, while only later 'framed and routed' towards FUSILLI targets. Thus, despite the governance of the hundreds of existing spontaneous initiatives is still in an embryonic state, many other governance acts have been discussed, edited and approved in only 3 years as a result from a collective democratic and inclusive process, adherent to the needs of the city[33].

Roman UA practices are currently being replicated in other cities worldwide also through the IURC exchange programmes. *Risorse per Roma* with *ANCI Lazio* received funding under GenerACTOR

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[28] https://www.comune.roma.it/web/it/attivita-progetto/rurban.page
[29] Based on capacity building in organizing, training people, and UCGs governance & regulations.
[30] FUSILLI, EU Horizon 2020 R&I Programme, 34 partners from 13 countries: https://fusilli-project.eu/about/partners/ among whom foundations, universities, research centres. It refers to Farm to Fork, EU Green Deal , FOOD 2030. Rome is one of the 12 pilot cities https://fusilli-project.eu/cities/ developing urban food plans. https://fusilli-project.eu/.
[31] Rome's Living Lab, managed by *Risorse per Roma*, works in sinergy with the City on the editing of Rome's public acts related to food. The 2nd and the 3rd Conference on Agriculture, in 2022 in 2023, were both held by the Municipality in collaboration with FUSILLI, with 300 participants, stakeholders from all the food system chain's stages.
[32] The Food Policy Council established in April 2023 with the approval of its Regulation, Resolution 68/2023 https://www.comune.roma.it/web-resources/cms/documents/DAC_68_2023.pdf. 156 delegates appointed after a public call https://www.comune.roma.it/web/it/notizia.page?contentId=NWS1061140
[33] A dedicated Food City Office, within the Administration; The 2023 new call for 'Allocation of Public Land to Young farmers': https://www.comune.roma.it/web/it/bando-concorso.page?contentId=BEC1102886; A New Regulation for UCGs; Resolutions for production, governance, consumption, distribution, waste. The City FC is a consultancy body for the City Assembly in developing the UFP.

project to coach the city of Barranquilla, Colombia, after the pandemic crisis. Four pilot investments are underway, starting the process of urban, social, green and economic regeneration of 4 degraded areas of the city, to develop a new model and transfer the results achieved to the Latin American capitals network. Communities being empowered to make use of degraded public land for UA purposes, again, shaping the urban food planning through a bottom-up and participatory process[34].

Risorse per Roma is also partner in the H2020 European project EFUA - 'Forum on Urban Agriculture', carrying out extensive research on types and benefits of UA, and governance models, to provide policy recommendations for mainstreaming UA into European, regional and local policies. UA is a thriving subject, globally, but has not made its way into EU policies yet, due to barriers resulting from gaps in both knowledge and advocacy. Benefits of UA and recommendations for action are targeted to EU policy makers. Impact is increased by C&D, and sustained by perpetuating the UA Forum's work. The objective of the project is to unlock UA's potential by achieving 'better knowledge, better deployment, and better policies'; to contribute to the co-design of a vision by defining next practices and stakeholder-based R&I programmes, and also by investigating UA's role as an innovator in agricultural, food and urban bioeconomy sectors. Universities, Research centres, Farmers' organizations and Local agencies - among the latter, *Risorse per Roma* – are the 11 project partners[35]. Cities need UA, UA needs EFUA, and EFUA needs Rome, where the UA practices are an integral part of the local culture and, in the last 15 years, the lead actors in multilevel governance in the use of public land for common purposes.

WHAT we learnt, what we share, what is next

Sustainable UA and NbS can take many forms and provide multiple benefits for health, environment, society and economy. They both increase the surface of green areas and, therefore, enhance climate change mitigation by reducing the heat island effect, increasing carbon sequestration (urban forests), reducing flooding and stormwater runoff. Green areas, increased through UA or NbS, help biodiversity and provide ecosystem services. Greener cities improve human health and well-being. UA ensures access to affordable and fresh food, NbS provide recreational areas positively impacting mental and physical health. Social cohesion and collective action are enhanced when communities are involved in UA and NbS implementation. Lastly, UA and NbS can create green jobs and foster R&I, and economic growth. Since both produce similar benefits and mitigate societal challenges, EFUA researchers believe that they should be associated with one another and upscaled jointly[36].

UA and NbS share comparable 'drivers and constraints'. Community building and participation is the major 'social' driver, while bottom-up policy making can be considered as their major 'institutional' driver. Both UA and NbS implementation depends on available resources as well as access to urban space. A lack of government support and community buy-in can undermine their implementation. Governance and financing are major barriers especially for NbS: the long-time frames for financial returns, and cities struggling to involve communities, slow down NbS implementation. UA gives poor economic profitability in the short term but is enabling community governance models across Europe. While the integration of NbS in the EU policy framework has witnessed significant advancements in the EU political agenda, the same cannot be said for UA. NbS are a core element of the EU Green Deal[37], while a review of EU policy areas and instruments, carried out by EFUA project, refers that UA is still neglected in EU policies, especially in the Common Agricultural Policy (CAP) which is the main policy for farming and food production. However, there is a significant uptake of UA practices at the local level with many EU cities having adopted and enforced relevant policies, like Rome did. On the other hand, NbS integration into local policies remains poor. Besides, NbS continue to receive significant EU R&I funding, crucial to fill knowledge gaps and build a substantial evidence-base of it

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[34] https://generactor.info/brite/. This is the first transfer of the Roman model of UCGs to an extra-EU country enhancing UA's potential as an instrument of good governance, active citizenship and participation, not only a means of survival.

[35] in Germany, Belgium, Bulgaria, Denmark, Netherlands, and Italy. https://www.efua.eu/

[36] The EFUA researches are currently under publication.

[37] And the Nature Restoration Law could provide important legal provisions for NbS in EU as it sets binding targets for green infrastructure: particularly the EU Biodiversity Strategy, the EU Strategy on Adaptation to Climate Change and the Farm-to-Fork Strategy.

through various platforms[38]. On the other hand, UA has received considerably less EU funding for R&I, and the only online atlas on UA, 'Urban Agriculture Europe', was developed through the COST Action over a decade ago and never updated[39]. If UA practices were embedded into policies and strategies that support NbS development and implementation, there would be advantages for both. UA would finally have a strong policy coverage at the EU level, while regional disparities across relevant policies and practices in the EU would be addressed. At the same time, UA would benefit from EU R&I funding devoted to advancing research on NbS. UA is already considered as a 'case study', hence included within existing evidence-based platforms on NbS. Though, this integration needs to occur at scale - not for individual case studies - to enable UA to access all the R&I funding. Considering UA as a NbS could also curb unsustainable UA practices: in the absence of relevant local policies, NbS policies could compensate and provide the sustainability requirements necessary to implement sustainable UA practices. As for the funding barrier to NbS advancement, recent studies see the highest investment potential for NbS in the forestry and agricultural sectors. All that said, we at EFUA believe UA should be subsumed into NbS to facilitate access to funding to both practices.

Embedding UA into European NbS policies and strategies would also benefit NbS development and implementation within urban settings. NbS is an 'umbrella term' that includes a wide range of concepts and practices, commonly accepted by EU institutions and member states but little explored and implemented at the city level. Implementation of NbS is difficult, at the local level, particularly because communities are not as engaged as they are with UA practices. NbS could therefore adopt governance models coming from UA. In particular, community-based governance and bottom-up policy making processes - implemented in Rome and other EU cities - could be transferred to any future NbS' development and implementation.

Reference list

FAO, RUAF (2015) *A vision for City Region Food System. Building sustainable and resilient city region*. https://www.fao.org/3/i4789e/i4789e.pdf.

Bernaschi D., Cimini A., D'Amico G., Gallo G., Giovanelli G., Kollamparambil A., Lirosi L., Marino, D., Mazzocchi G., Minotti B., Pagano G., Stella G., Tarra S. (2022) *Atlante del cibo. Uno strumento per le politiche locali del cibo, Città metropolitana di Roma Capital.* CURSA, 9788894227239. https://geoportale.cittametropolitanaroma.it/sites/default/files/inline-files/AtlanteDelCibo_CURSA_PSMCmRC-1.pdf.

Moragues-Faus A. et al. (2013) *Urban food strategies: the rough guide to sustainable food systems*. http://www.foodlinkscommunity.net/fileadmin/documents_organicresearch/foodlinks/publications/Urban_food_strategies.pdf.

Sonnino, R. (2009) 'Feeding the city: Towards a new research and planning agenda', *International Planning Studies*, 14(4), pp.425–435.

Mazzocchi, G., Marino, D. (2020) 'Rome, a Policy without Politics: The Participatory Process for a Metropolitan Scale Food Policy', *International Journal of Environmental Research and Public*, 17, p. 479.

FoodActionCities platform (2021) Bottom-up process to establish an integrated FP – Rome. foodactioncities

Van Dam D. et al. (2023) 'Applying new lenses to UA: Urban Metabolism, Urban-Rural Linkages, and Urban Food Systems' *Urban Agriculture Magazine*, (39), p. 18. urban-agriculture-magazine-39 (1).pdf

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[38] H2020 funded NbS for €282mln. Further investments in NbS r&i delivered through COST, ERDF, LIFE+ and EIB's Natural Capital Financing Facility. Platforms: OPPLA, NWRM, Climate-ADAPT, Urban Nature Atlas and Network Nature.
[39] Under H2020, only € 94 million spent for 18 projects, €75.4 million of which funded 8 projects where UA played a negligible role.

The City's Low Hanging Fruits

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The City's Low Hanging Fruits

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The urban environment is full of edible trees and plants that are rarely addressed as a potential source of food, despite the increasing attention to urban food policies and urban forest plans. This study explores the potential for incorporating edible trees into urban food policy and attempts to understand the incentives and barriers for meeting this potential. Our case study considers the bitter orange, an unpopular fruit for eating, which grows in many Mediterranean cities. We consider it a 'least likely case': if it could be integrated into urban food systems, other more popular fruits could be similarly integrated. Food policy is an interdisciplinary field relying on multiple fields of expertise, as well as local knowledge, to maximize potential success. We conducted a three-phase Delphi survey with 13 experts representing diverse fields such as agronomy, food security, and food production, and from various sectors including municipal, academic, business, and non-profit. These experts developed and evaluated the desirability and feasibility of different policy scenarios for exploiting bitter orange trees in the Israeli city of Kfar Saba for consumption. Each scenario consisted of three stages: picking the fruits, processing them into product/s, and distribution. The experts' preferred scenario involved school children harvesting fruits as part of an agricultural-based educational curriculum, followed by processing facilitated by a local food industry. The resulting product/s would be marketed locally, with profits donated to charities. Experts highlighted this scenario's potential to convey educational values (such as learning about the source of food) and promote community building and pro-environmental behaviours. This scenario was considered feasible due to its ability to be integrated into an existing administrative framework (the school system) while ensuring financial sustainability and political appeal. Aligned with other food policy practices, the scenario requires action from actors of multiple fields: educational, industrial, retail, and charity, suggesting implementation might be challenging. Findings suggest that edible plants can be comprehensively integrated into urban food policies, not only as a food source but also as means to advance environmental and food education and increase social capital. It also suggests "fun" is important factor in the implementation process. However, the emphasis the experts put on educational and social values rather than on trees as a food source, raises questions regarding development of environmental policies in general, with education and social values as a way of avoiding more demanding changes in behaviours.

Keywords: urban food policy, urban forest plans, edible trees, bitter orange, environmental policy, environmental education

Introduction

Chef Asaf Doktor gathers his crew. They lean ladders against orange trees in the nearby street and start picking. These are bitter oranges - a sour type of orange with a poor public image. You bite into the orange expecting a fresh sweetness, but instead are overcome with bitterness. Doktor will use these fruits to make jams, syrups, and drinks to sell in his restaurant. These fruits, will soon become waste, and so are seen in Doktor eyes as better used for food and pleasure (Vered, 2024). This perspective is the base of many mapping initiatives, whether local (i.e. [Fruit trees, herbal shrubs and healing plants in the urban environment - Israel]', 2023) or global (i.e., 'Falling fruit - map the urban harvest', n.d.), each drawing attention to many publicly accessible edible trees and plants.

With Doktor's optimism in mind, this research is inspired by the potential of edible trees and their fruit that grow innocuously in urban environments. Although these fruits are widely available, they often go unrecognized in formal municipal policies – neither in urban food policies nor in urban forest policies. This research seeks to understand if, and in what ways, the fruits of urban edible trees can be utilized.

Literature Review

To understand cities' actions and policies toward edible trees, it is important to recognize and understand the significance of urban food policies, the benefits of urban food production, and the way urban forestry plans have largely disregarded edible trees.

As the potentially positive impact that food systems can have on community health, economic development, and natural resources becomes increasingly understood (Pothukuchi and Kaufman, 1999), cities have begun addressing them in municipal policies (Brand *et al.*, 2019). The 2015 Milan Urban Food Policy Pact (MUFPP), with 280 city signatories by 2024, is one of the most significant examples of the increasing attention given to urban food policy (*MUFPP*, n.d.). We use this pact and its implementation as an important example of the goals and emphases of contemporary urban food policies.

Urban food policy is complex. It addresses many issues and sets diverse goals, approaching the subject from diverse disciplinary fields. Halliday (2019) highlights nine goals, including social regeneration, food resilience, security, public health, and inclusion, across 11 policies from Europe, the Americas, and Asia. Candel identifies 31 goals among 41 policies in MUFPP signatory cities, the most common among them being local food production, sustainable agriculture, economic development, and education (Candel, 2020). The MUFPP declares an overarching goal of creating more sustainable food systems through six fields of action: governance, diet and nutrition, social and economic equity, food production, supply and distribution, and food waste (*MUFPP*, n.d.).

Having a variety of goals promoted through diverse policy fields, urban food policies require interdisciplinary and interagency policy actions to achieve synergy between the public sector, the private sector, and other components of civil society. This is recognized as a given by MUFPP (2015) and by Pothukuchi and Kaufman (1999), and in practices de facto, as shown in existing urban food policies (Halliday, 2019; Candel, 2020; Barbour, Woods and Brimblecombe, 2023).

Producing food in the city, which offers nearby fresh food, can increase resiliency, food security, and social capital. Resiliency – the ability to absorb shocks as well as facing long term stresses (Resilient Cities, n.d.) – is positively associated to urban food production. For example, it is recommended for earthquake preparedness policies (Slater and Birchall, 2022), as a lesson from Covid-19 (Gebhardt and Neumann, 2021), as a means for withstanding the impacts of the Russia-Ukraine war (Galanakis, 2023), or as climate change readiness measure. (Kowalski and Conway, 2019; Walhowe, 2022).

The link between food security, urban agriculture, and foraging is extensively explored, particularly in the global south. Research highlights benefits like fresh produce access and economic value from self-grown goods (Orsini et al., 2013; Hamilton et al., 2014; Badimo, 2015). In the global north focus shifts to impacts on vulnerable communities like refugees and minorities, stressing social capital gains through community gardens and orchards (Malberg Dyg, Christensen and Peterson, 2020). This research shows that community gardens, orchards or forests can enhance food security while prioritizing increasing social capital - community building, education, and nature connection (Guitart, Pickering and Byrne, 2012; McLain *et al.*, 2012; Riolo, 2019; Zheng and Chou, 2023).

Despite the increasing prevalence of urban food policies and the recognized benefits of accessible urban-grown food, edible trees are rarely part of urban forest or green infrastructure policies. Studies on urban forest management plans in Canada and the US reveal that only about 25% include trees with produce for human consumption (Clark and Nicholas, 2013; Kowalski and Conway, 2019). When published policies or decision makers do address edible fruit trees, some acknowledge the challenges they pose due to the additional care required compared to non-fruit bearing trees. This care – such as applying safe pesticides or adaptive pruning – demands a broader knowledge base and a skilful staff (Kowalski and Conway, 2019; Walhowe, 2022).

Other challenges arise with unharvested fruits. When left to fall, these become litter which requires additional maintenance. Fallen fruits pose risks such as property damage, potential injury, or attracting unwanted wildlife (Borelli, Conigliaro and Pineda, 2018; Kowalski and Conway, 2019). Policies address these challenges by providing instruction for future planting, deciding on species or planting locations (Clark and Nicholas, 2013; Kowalski and Conway, 2019). When addressing harvesting, policy and decision makers assume it will be performed by NGO's or passersby (Kowalski and Conway, 2019). However, most people passing by will avoid picking fruit because it is considered to be outside the social norm (Yates, 2014; Colinas, Bush and Manaugh, 2019; Lidmark, 2019).

Research focus and questions

In many cases, including our case study, edible trees already populate urban landscapes. Given the challenges posed by unharvested fruit with the benefits of utilizing it (e.g., increasing resiliency, food security and social capital), one could expect the policies would address exploiting the fruit of both existing and future urban edible trees. This study aims to explore the potential for policy development to promote the use of edible fruit-bearing trees in the urban environment and to understand the incentives and barriers for meeting this potential. Our focus is on institutional actors, such as municipal authorities, schools, and other urban organizations. We ask:

- What viable policy can be designed to exploit the potential of the produce of edible trees?

- What values lead to and support such policy? What incentives can encourage policy success? What are the barriers for implementing such policy and how, if possible, can we overcome them?

Methodology

Case Study – the Bitter Orange

Our case study considers the bitter orange, (*Citrus × aurantium*), which sometimes is referred to as Seville orange, and grows in many Mediterranean cities (Tolokovsky, 1966). Despite being an edible fruit suitable for sweet, sour, or savoury dishes, the bitter orange is often overlooked by the public as inedible or undesirable[1]. It is used as an ornamental urban street tree, as well as rootstock for grafting other citrus (Zuria, 2022). We consider the bitter orange, which is widely distributed, as a *'least likely case'* (Flyvbjerg, 2011). In other words, if the bitter orange could be integrated into urban food systems, other more popular fruits could be similarly integrated.

The research was conducted in Kfar Saba, a city with ~100,000 residents and an economic ranking of 8 out of 10, with 10 being highly affluent. Founded in 1904, it covers an area of ~14.17 square kilometers and boasts a significant number of bitter orange trees in both groves and along its streets, reflecting its history of orchard cultivation. The municipality of Kfar Saba prioritizes sustainability, branding itself as "Green Kfar Saba" and maintaining a dedicated sustainability department that addresses waste management, energy efficiency, education, and climate change preparedness (Vizenberg, 2022; *Kfar Saba municipal site*, n.d.).

Policy exploration via the Delphi method

Our selected methodological tool, the Delphi method, simulates a discussion between a group of experts using an iterative process answering questionnaires. It is designed to reach a consensus – or in our case, a policy – using the aggregation of private judgments (Linstone and Turoff, 2002; Niederberger and Spranger, 2020). This approach aims to explore all

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[1] The unpopularity of the bitter orange is an assumption based on the accumulation of preliminary interviews and conversations as well as journalist and recipe items, such as: (Zuria, 2022; Vered, 2024).

potential policy options, considering the impacts and potential of each option (Linstone and Turoff, 2002).

As noted, food policy is an interdisciplinary field that relies on multiple fields of expertise, as well as local knowledge, to maximize potential success. Our expert group was comprised of 13 experts representing diverse fields including landscape architecture and agronomy, urban foraging and agriculture, food production and service, citrus farming, sustainability education, and law and insurance. The experts also represent different sectors of civil society, including municipal, academic, business, and non-profit sectors. Some experts have a direct affiliation with Kfar Saba.

In our study, each expert engaged in three questionnaire iterations, developing and evaluating scenarios for utilizing bitter orange fruit in Kfar Saba. They received detailed information on bitter orange trees, fruits and recipes, Kfar Saba's context, including a map showing 27 tree locations, and examples of urban fruit tree initiatives internationally. Our experts were asked to rank the desirability and the feasibility of different policy scenarios. These two elements (desirability and feasibility) were explored to produce a policy that would be both desired from a values perspective and feasible from a practical perspective (Linstone and Turoff, 2002). Each scenario involved three stages: picking, processing, and distributing. Initially, four scenarios were presented, three assigning responsibilities to a single actor (municipal, NGO, or business) for all stages, and one involving various actors, including a school program. Experts could modify and propose their own scenarios, providing justifications for their choices throughout the process.

The experts' ranking was analysed using descriptive statistics to identify feasible and desirable scenarios. Textual responses from experts were thematically analysed, with over 1,000 phrases coded based on themes such as desirability, feasibility, and issues beyond these factors, like dietary considerations or other concerns.

Results

After three rounds of consultation, the experts' preferred and consensual scenario involved school children harvesting fruits as part of an agricultural-based educational curriculum, followed by fruit processing that would be facilitated by a local food industry. The resulting product/s would be marketed locally, with profits donated to charities. The participants further elaborated to include involvement of school children in all three stages, suggesting, for example, a fieldtrip to the factory, or having the children help sell the products.

Picking	Proccesing	Distributing
School children harvesting fruits as part of an agricultural-based educational curriculum.	Local factory, restaurant, or other food services kitchen. Variety of products to be developed. * If possible, a fieldtrip for the school children should be considered	Product/s would be marketed locally, with profits donated to charities. * If possible, involvement of school children in sales should be considered

Desirability - Values		Feasbility - Practicality	
Education		**Existing administrative framework**	
Increasing social capital		**Knowledgeable personal**	
Help people in need		Fiscal viability	
		Political appealing	

Table 1: The preferred scenario including the three stages of picking, processing, and distributing, with the values and practical characteristics justifying the selection of the scenario according to the experts.

The preferred scenario was considered most desirable by experts primarily due to its focus on "education" as the leading value. This emphasis was reiterated by participants, who highlighted the importance of involving students in all three stages of fruit exploitation. Additionally, values such as "increasing social capital" and "helping people in need" were emphasized. Economic and environmental values associated with fruit exploitation were deemed less important.

Practically, this scenario was deemed most feasible by experts due to its utilization of the existing school system, capable of independently executing projects and employing skilled professionals. Another practical component addressed were the fiscal and financial viability (but not profitability) of the activity: the experts did not address actual numbers, but rather relied on their experience to assess whether the scenario would be so. The scenario was also addressed as political appealing, meaning gaining the support of the municipal system was considered highly feasible.

Discussion

The aim of this research is to address a gap in the research and practice within urban food policy, namely the lack of policy and management strategies addressing edible trees found in cities and their potential for providing food. Through querying experts regarding the use of the bitter orange in Kfar Saba, our findings suggest a potentially successful urban food policy for exploiting the produce of edible trees. Here we consider the values underlying advocacy for this policy, its incentives, and potential barriers to its implementation.

The main value underlying support for this policy, according to our experts, is 'education'. Other values emphasized are 'increasing social capital' and 'helping people in need'. Education plays a pivotal role in environmental policy. Cohen (2006), who focuses on the broader topic of environmental policy, highlights the proliferation of environmental education globally since 1970 and how an informed public can catalyze grassroots movements for better environmental solutions. This idea resonates in literature advocating for the incorporation of urban edible trees into policies, suggesting that bottom-up movements are crucial for their integration (McLain et al., 2012; Clark and Nicholas, 2013; Riolo, 2019). Additionally, research underscores the impact of early experiences with edible trees, indicating that exposure to such activities in childhood increases the likelihood of fruit picking or foraging in urban environments (Synk et al., 2017; Colinas, Bush and Manaugh, 2019). Six experts in our research advocated for an agriculture-based educational curriculum drawing from their own educational experiences.

Incentives for investing in environmental education programs extend beyond knowledge generation and behavioural changes. They also hold political and economic appeal. Policies centered on behavioural change often require less economic resources and encounter less conflict and opposition compared to policies with direct implications, such as public costs or adding regulation (Cohen, 2006). When such policy focuses on educational programming for children, it was perceived by experts as being even more socially acceptable, and thus easier to implement. Seven experts noted that being politically appealing is an important factor contributing to the viability of the policy.

It is common to look at environmental issues as questions of values and social behaviour (Cohen, 2006). In our research the experts primarily emphasized 'education'. Nine experts stressed the significance of creating positive experiences for children across all stages of food production. Two experts suggested that including a charitable component ('help people in need') was valuable primarily for its educational benefits rather than its direct impact on those in need. Regarding the quantities of fruit exploited, experts deemed this question less important than the educational value itself. Cepic and colleagues (2017), summarizing research on community gardens, observed a 'trend' focusing on the social gains, noting a scarcity of studies on actual food quantities produced in urban areas (Cepic and Dubljevic Tomicevic, 2017).

Three main barriers towards implementing the selected scenario were mentioned by the experts. The first is the need for trained and knowledgeable personnel. This barrier is well represented in the literature (e.g., Kowalsky and Conway, 2019; Walhowe, 2022). Experts suggested that involving the school system could overcome this obstacle by enabling the recruitment of suitable personnel. The second barrier is the difficulty to initiate and maintain such policy – how do we begin a positive process that will spread and succeed? 'Attractive and enjoyable' was ranked by the experts with the highest importance for successful continuity. The importance of *'fun'* for fruitful experiences is lacking in the literature. The need for a 'pioneering spirit' was mentioned by four experts, with two of them volunteering to be part of such a project. Being politically appealing as presented, those desired "pioneers" and will find it rather easy to gather support. The significance of bottom-up and civil society action for supporting successful initiatives related to edible plants is evidenced by Riolo (2019) in Parma, Italy, McLain et al. (2012) in Seattle, and Clark and Nicholas (2013) in their exploration of 37 food forestry initiatives.

The third barrier addressed the bitter orange fruit itself. The experts mentioned the lack of public knowledge, the poor image, and the required processing for eating. No experts favoured a scenario of distributing the fruits as is. Instead, suggestions included product branding and public education campaigns as part of the marketing process.

Aligned with other food policy practices, this creates a complex scenario, demanding action from actors and stakeholders of multiple fields: school, factory, retail, and charity. The Delphi method's integration of diverse expert perspectives toward a consensual scenario suggests that overcoming this complexity is possible. Some experts proposed selecting a different fruit or variety to alleviate complexity, indicating the generalizability of the research findings.

Research Significance

This study illuminates a blind spot in urban policies concerning edible trees: exploiting the fruit itself. It presents a desirable and feasible policy applicable to many cities, leveraging a variety of edible trees and plants to promote education, increase social capital, and assist those in need while maintaining financial viability and political appeal. The study underscores the importance of 'fun' in policy formation and implementation, a factor often overlooked in behavioural policies. It demonstrates how environmental education can serve as a cornerstone for civil society initiatives, catalysing further environmental policies. However, some critics may perceive the focus on education as an "easy way out," as education-focused policies are easier to garner support for but results in future oriented, unmeasurable outcomes. Nevertheless, immediate and measurable action regarding environmental issues is imperative (*IPCC, 2023: Summary for Policymakers*, n.d.). It is conceivable that employing a different method—rather than the Delphi method, which aims to reach consensus—may yield a different policy design.

Bibliography

Badimo, D. (2015) 'Utilization of edible wild plants and their contribution to household income in Gweta Village, central Botswana', *African Journal of Food Science and Technology*, 06(07). Available at: https://doi.org/10.14303/ajfst.2015.074.

Barbour, L.R., Woods, J.L. and Brimblecombe, J.K. (2023) 'Local government policy to facilitate healthy and sustainable diets and the broader policy hierarchy: insights from Milan Urban Food Policy Pact cities', *Health Research Policy and Systems*, 21(1), p. 35. Available at: https://doi.org/10.1186/s12961-023-00988-6.

Borelli, S., Conigliaro, M. and Pineda, F. (2018) *Urban forests in the global context*, *Unasylva*.

Brand, C. *et al.* (eds) (2019) *Designing Urban Food Policies - concepts and approaches*. Springer. Available at: https://doi.org/10.1007/978-3-030-13958-2_6.

Candel, J.J.L. (2020) 'What's on the menu? A global assessment of MUFPP signatory cities' food strategies', *Agroecology and Sustainable Food Systems*, 44(7), pp. 919–946. Available at: https://doi.org/10.1080/21683565.2019.1648357.

Cepic, S. and Dubljevic Tomicevic, J. (2017) 'Urban Community and Allotment Gardens: Research Trends and a Look Ahead', *The Journal 'Agriculture and Forestry'*, 63(4), pp. 191–200. Available at: https://doi.org/10.17707/agricultforest.63.4.20.

Clark, K.H. and Nicholas, K.A. (2013) 'Introducing urban food forestry : a multifunctional approach to increase food security and provide ecosystem services', pp. 1649–1669. Available at: https://doi.org/10.1007/s10980-013-9903-z.

Cohen, S. (2006) *Understanding Environmental Policy*. New York: Columbia University Press.

Colinas, J., Bush, P. and Manaugh, K. (2019) 'The socio-environmental impacts of public urban fruit trees: A Montreal case-study', *Urban Forestry and Urban Greening*, 45(April 2018), p. 126132. Available at: https://doi.org/10.1016/j.ufug.2018.05.002.

'Falling fruit - map the urban harvest' (no date). Available at: https://fallingfruit.org/?z=13&y=32.07014&x=34.78657&locale=en (Accessed: 15 May 2024).

Flyvbjerg, B. (2011) 'Five Misunderstandings About Case-Study Research', *Qualitative Research Practice*, pp. 390–404. Available at: https://doi.org/10.4135/9781848608191.d33.

Galanakis, C.M. (2023) 'The "Vertigo" of the Food Sector within the Triangle of Climate Change, the Post-Pandemic World, and the Russian-Ukrainian War', *Foods*, 12(4), p. 721. Available at: https://doi.org/10.3390/foods12040721.

Gebhardt, B. and Neumann, A. (2021) *Sustainability 'Heroes' in Times of Crisis-The Food Sector's Perspective*. Available at: https://www.researchgate.net/publication/352410469.

Guitart, D., Pickering, C. and Byrne, J. (2012) 'Past results and future directions in urban community gardens research', *Urban Forestry and Urban Greening*, 11(4), pp. 364–373. Available at: https://doi.org/10.1016/j.ufug.2012.06.007.

Halliday, J. (2019) 'Cities' Strategies for Sustainable Food and the Levers They Mobilize', in C. Brand et al. (eds) *Designing Urban Food Policies - concepts and approaches*. Springer. Available at: https://doi.org/10.1007/978-3-030-13958-2_6.

Hamilton, A.J. *et al.* (2014) 'Give peas a chance? Urban agriculture in developing countries. A review', *Agronomy for Sustainable Development*, 34(1), pp. 45–73. Available at: https://doi.org/10.1007/s13593-013-0155-8.

IPCC, 2023: Summary for Policymakers (no date). Geneva, Switzerland, pp. 1–34.

Kfar Saba municipal site (no date). Available at: https://www.kfar-saba.muni.il/ (Accessed: 27 May 2024).

Kowalski, J.M. and Conway, T.M. (2019) 'Branching out: The inclusion of urban food trees in Canadian urban forest management plans', *Urban Forestry and Urban Greening*, 45(June 2018), p. 126142. Available at: https://doi.org/10.1016/j.ufug.2018.05.012.

Lidmark, J. (2019) *(Un) forbidden fruits*. Stockholms universitet.

Linstone, H.A. and Turoff, M. (eds) (2002) *The Delphi method: Techniques and Applications*.

Malberg Dyg, P., Christensen, S. and Peterson, C.J. (2020) 'Community gardens and wellbeing amongst vulnerable populations: A thematic review', *Health Promotion International*, 35(4), pp. 790–803. Available at: https://doi.org/10.1093/heapro/daz067.

McLain, R. *et al.* (2012) 'Producing edible landscapes in Seattle's urban forest', *Urban Forestry & Urban Greening*, 11(2), pp. 187–194. Available at: https://doi.org/10.1016/j.ufug.2011.12.002.

MUFPP (no date) *Milan urban food policy pact*. Available at: https://www.milanurbanfoodpolicypact.org/ (Accessed: 13 May 2024).

Niederberger, M. and Spranger, J. (2020) 'Delphi Technique in Health Sciences: A Map', *Frontiers in Public Health*, 8(September), pp. 1–10. Available at: https://doi.org/10.3389/fpubh.2020.00457.

Orsini, F. *et al.* (2013) 'Urban agriculture in the developing world: A review', *Agronomy for Sustainable Development*, 33(4), pp. 695–720. Available at: https://doi.org/10.1007/s13593-013-0143-z.

Pothukuchi, K. and Kaufman, J.L. (1999) 'Placing the food system on the urban agenda: The role of municipal institutions in food systems planning', *Agriculture and Human Values*, 16(2), pp. 213–224. Available at: https://doi.org/10.1023/A:1007558805953.

Resilient Cities (no date) *OECD*. Available at: https://www.oecd.org/cfe/regionaldevelopment/resilient-cities.htm (Accessed: 15 April 2024).

Riolo, F. (2019) 'The social and environmental value of public urban food forests: The case study of the Picasso Food Forest in Parma, Italy', *Urban Forestry & Urban Greening*, 45, p. 126225. Available at: https://doi.org/10.1016/j.ufug.2018.10.002.

Slater, T. and Birchall, S.J. (2022) 'Growing resilient: The potential of urban agriculture for increasing food security and improving earthquake recovery', *Cities*, 131, p. 103930. Available at: https://doi.org/10.1016/j.cities.2022.103930.

Synk, C.M. *et al.* (2017) 'Gathering Baltimore's bounty: Characterizing behaviors, motivations, and barriers of foragers in an urban ecosystem', *Urban Forestry and Urban Greening*, 28(October), pp. 97–102. Available at: https://doi.org/10.1016/j.ufug.2017.10.007.

Tolokovsky, S. (1966) *The Fruit of the Citrus Tree [Hebrew: פרי עץ הדר]*. Jerusalem: Bialik Institute.

Vered, R. (2024) 'עלילות קוטפי החושחש בעיר הגדולה [The story of the bitter orange pickers in the big city]', *Haaretz*, 24 February. Available at: https://www.haaretz.co.il/food/dining/2016-02-24/ty-article/.premium/0000017f-e065-df7c-a5ff-e27f677b0000.

Vizenberg, Y. (2022) 'Preliminary interview with the managar of Kfar Saba museum'.

Walhowe, J.L. (2022) 'Land manager decision-making practices when establishing public fruit-bearing plants in Hennepin county municipalities, Minnesota', *Urban Forestry & Urban Greening*, 74, p. 127659. Available at: https://doi.org/10.1016/j.ufug.2022.127659.

Yates, E. (2014) *Can't see the fruit for the trees:* Lund University Centre for Sustainability Studies.

Zheng, Z.-W. and Chou, R.-J. (2023) 'The impact and future of edible landscapes on sustainable urban development: A systematic review of the literature', *Urban Forestry & Urban Greening*, 84, p. 127930. Available at: https://doi.org/10.1016/j.ufug.2023.127930.

Zuria, A. (2022) 'Preliminary interview with agronomist and initiator of edible orchard in Kfar Saba'.

'עצי פרי, שיחי תבלין וצמחי מרפא במרחב העירוני - ישראל [Fruit trees, herbal shrubs and healing plants in the urban environment - Israel]' (2023). Jerusalem. Available at: https://www.google.com/maps/d/viewer?fbclid=IwAR1tEWGvCIHyvebe3Cvis4OlQK9BNYTJyKyfoM8iFdo2N6Kro0n_EyUf-xQ&mid=1zEOTq_uRGrXhpSiyrQGA6oS-bMM&ll=31.769028853539133%2C35.18524919500388&z=13 (Accessed: 15 May 2024).

PAPER SESSION 1.D
FOOD
MAPPING
INITIATIVES

The University as a Critical Player of the Urban Food Policies. Towards a Food Atlas for the City of Trieste

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The University's Critical Role in Co-shaping the Food-City Nexus. Towards a Food Atlas for the City of Trieste

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In the interdisciplinary food debate, food atlases are increasingly gaining attention. However, there is a lack of shared understanding of what a food atlas is, how it works and its empirical effects in reading the food-city nexus while driving its transformation. On the one hand, food atlases' blurred contours highlight their potentiality for experimentation in diverse contexts, downscaling European food politics to local urban policies. On the other hand, this suggests that the food atlas may act as a critical device to upscale food micropolitics, where urban food policy is absent or precarious. It seems relevant to explore the food atlas to disentangle its spatial agency. By questioning the university's role in re-shaping the food-city nexus, this study offers a preliminary Food Atlas for the multicultural city of Trieste. Despite the lack of urban food policies, Trieste and its university are relevant as a case study due to the recent rise of sustainable food practices and socially engaged food actors, suggesting the emergence of a food citizenship struggling to upscale its agency. Thus, the case study's specificity offers a lens to frame the food atlas and its spatial agency, shedding light on the challenges, potentialities, and limitations of exercising a systemic approach to food planning.[1]

Keywords: food-city nexus, food atlas, university.

The Food Atlas: a Design Research Method

Since the beginning of the 21st century, the lens of food pushed a change of perspective in urban studies, recognising food systems as an urban question instead of an exclusively rural one. Food systems from being "a stranger to the planning field" (Pothukuchi, Kaufman, 2000, 113) turned into a core issue to face the challenges of advancing theoretical frameworks (Viljoen, 2005; Steel, 2008; Parham, 2015; Cabannes, Marocchino, 2018) and research and urban design methods (Bohn, Tomkins, 2024). This shift also led to implementing food policies, strategies (Verzone, Woods, 2020) and practices in various cities and their bioregions. In this debate, food atlases are increasingly gaining attention, emerging as a food mapping research method and tool in many European contexts, as in Italy (Rome, Milan, Turin, Matera), Austria (Wien), Portugal (Lisbon), and the Netherlands. However, there seems to be a lack of shared understanding of what a food atlas is, how it should work and its empirical effects in reading the food-city nexus while driving its transformation. Reflecting on the case-by-case scope the food atlas addresses as a means, it seems fundamental to disentangle its agency to inform the specific case for implementation and contribute to the food atlas' general understanding.

On the one hand, the food atlas is understood as the result of the mapping process, such as in the case of Milan (Comune di Milano, Fondazione Cariplo, Està, 2018, 95); or as a territorial photograph of the food system in a specific moment (Marino *et al.*, 2022), even though progressively implementable. In these cases, the focus on methodologies reveals its research potential to push shared knowledge creation. On the other hand, the food atlas' blurred contours may suggest a complex relation with policy making. For example, Turin's food atlas consists of "a context, a process, and an instrument" (Dansero *et al.*, 2018, 17). It performs as a dynamic interface between food system multi-scalar and multi-foci representation, a participative, interdisciplinary and intersectoral process of knowledge production, and a tool to bridge food practices and actors across scales. At the same time, the university seems to emerge as a key player among all the actors involved in the food atlas implementation. Even though playing different roles from one case to another, the transversal presence of the

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university also suggests the need to question its position with respect to the food atlas formation, and the presence or lack of urban food policies. While the demand for a food atlas seems to arise in the context of urban food policy establishment, this contribution aims to explore another overlooked hypothesis.

The research questions the critical role of the university in re-shaping the food-city nexus while understanding the food atlas as a design research method to upscale urban food micropolitics where urban food policy is absent or precarious.

The exploratory study emerges from sharing the initial findings of a design line of research on the food-city nexus in the multicultural city of Trieste[2]. As a case study, Trieste and its university are relevant because here, despite the lack of urban food policies, the recent rise of sustainable food practices and socially engaged food actors suggests the emergence of food citizenship (Basso, Di Biagi, Crupi, 2022) and the need to upscale its agency. Thus, the case study's specificity offers a lens to frame the food atlas' spatial agency, questioning the role of the university in upscaling the existing food practices and micropolitics while downscaling European food politics, be it a pioneer or a leader in triggering urban food policies. The understanding of a food atlas as "a context, a process, and an instrument" (Dansero *et al.*, 2018, 17) informs the research methodological approach, thus engaging the food mapping process in making visible the intersection of food spatiality, between the university and the city; food actors, in the university's community and the urban food system; and food practices, eating habits but also food-related socio-spatial practices.

Towards a Trieste's Food Atlas: Mapping Food Spatiality, Food Actors and Food Practices

The University of Trieste is an Italian public post-secondary education institution. With a population of approximately 20.000, the university's community quantitatively represents about 10% of the inhabitants living in the mid-sized multicultural city of Trieste. As in many other cases in Italy and Europe, the university is a hub of a knowledge-based economy, fostering interactions across the industry, the government, and the socio-ecological environment (Carayannis, Campbell, 2010). Since 2016, the university has committed its governance to the SDGs to contribute to the societal challenge of transition towards sustainability. Still, the cross-disciplinary and cross-sectoral lens of food seems to be overlooked in the university agenda; there is a lack of food didactic programs, the scarcity of food system research, and the deficiency of food-related third mission activities. The lack of university food governance may be related to the absence of local urban food policies if assuming a university's role as a merely passive consumer. However, almost unnoticed sustainable food practices are already implemented by local food actors, be they part of the university community (for instance, a community gardening association, held also by university's students; the university's canteen food waste redistribution practice enacted by a charity organisation) either the urban one (as alternative food chains, urban agriculture cooperatives, slow food movements). These socio-spatial food practices are now attempting to reshape the rural-urban relationships, performing a sort of food micropolitics (Dolphijn, 2004).

On the one hand, they risk shortly running out (as recently happened for a social value-based short food chain) or being co-opted by the conventional food system due to a lack of knowledge, resources, or capacity. On the other hand, this food agency embeds the potential to increase its impact on intensifying citizens' and community well-being in the short-term, while offering food experiential learning to "grow growers" (Bartlett, 2011, 109) in the long term. This

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[2] The food-city nexus is under inquiry from multiple perspectives, the first intersecting spatial justice and food urban design and planning; the second addressing the regional and urban foodscape, and the latter on the food-university architectural and urban design, from foodspace to foodscape. For further discussion, see: Basso, Rodani, Venturini (2024) 'Decostruire immaginari per ripensare politiche e progetti. Cibo e rigenerazione urbana in Friuli Venezia Giulia', in *Proceedings of XXV SIU National Conference Società Italiana degli Urbanisti: Transitions, Spatial Justice and Territorial Planning*. Conference held in Cagliari, June 15-16 2023. Planum, SIU (forthcoming); or Rodani, V. (2024) *University and food system. University collective practices for sustainable food systems*. Research report, financed by LR 34/2015, art. 5. Trieste: University of Trieste. Venturini, C. (2024). *Foodscaping. Ripensare i territori attraverso il sistema del cibo.* PhD dissertation (ongoing). Trieste: University of Trieste.

phenomenon then questions a more active university's role in investigating the food-city nexus, addressing the food sustainability discourse, practice, and policy. By making the undergoing urban food laboratory more visible, the university may respond to the needs of local food actors in terms of shared knowledge creation, transmission, and capacity building. By bridging these gaps, the research advances the Trieste's food atlas as a systematic inquiry and design synthesis or to make the edible city more visible.

Food Atlas as a Context: Mapping Foodspaces between the University and the Public City

The food mapping process addresses the spatiality of food "from foodspace to foodscape" (Basso, Rodani, Venturini, 2024), between the university and the city by implementing a qualitative spatial analysis. Shifting from the architectural to the urban scale, the food mapping process implemented photographic surveys, site visits, GIS data collection, redrawing, and mappings to be synthesised in a map, making an initial and potential edible city visible. Starting from foodspaces mapping, it then layered the manifold spaces of food consumption (as literary café, restaurants, *trattorie* and *osterie*), food waste recovery (as charity's refectories, NGOs, associations), food transformation (as bakeries, oil mills, collective kitchens), food distribution (as permanent food and fish markets, temporary street foods, groceries) and food production (collective and community gardens, agriculture cooperatives and associations, *osmize*) both in the university and in the public city (Di Biagi, Marchigiani, Marin, 2002; Di Biagi, Marchigiani, 2009) (as the spaces of welfare as public services and infrastructures, public housing, public squares, public gardens and parks), to make visible the Trieste's urban foodscape. The food mapping process focused on spaces where food is perceived and experienced as a social and cultural practice, at the intersection of community making, experiential learning, conviviality, well-being, and welfare space.

The spatiality of the university – and particularly that of food – is deeply intertwined with the historical, cultural, and political background of a frontier city such as Trieste. In fact, in Trieste, the complexity of the rural-urban relationship has been the stage of a discursive polarisation (Verginella, 2008) whose socio-spatial features manifest still today, problematising the understanding of the manifold and tentacular foodways feeding the city. As a cosmopolitan free port city opened to the sea, the urban centre connected with shifting and distant hinterlands while enclosed by the Carso/Kras plateau, a culturally rich but scarcely productive *umland* [rural region] to feed the city. The complexity of the rural-urban relationship manifests also in the university spatiality, revealing some contradictions. The university's spatial realm reflects the different moments of urban development, manifesting today in the assemblage of spatial models, from the 18th-century urban building block to the detached university citadel, from the extra-urban campus to the more recent urban and regeneration designs in Trieste (as the new student housing in a former military hospital, or Portovecchio), its outskirts (as in Grignano, Padriciano and Basovizza) or even in other smaller suburban towns (as Gorizia, Pordenone and Portogruaro). The university's scattered foodspaces consist of the leading institutional canteen in the central campus, some cafeterias, and a few dining rooms, namely monofunctional spaces for catering only. At the same time, no spaces are conceived for hybrid, convivial, and collective uses, be it for food waste recovery, collective food transformation, or food production. Moreover, the extension and distribution of public university open spaces, gardens, and urban parks may presume an intense engagement with food production practices, but actually, there is none. Also, the physical proximity of the university's buildings and public students' housing with sites of urban food socio-spatial practices such as urban farming (as in S. Giovanni Park) suggest a potential for interaction among the university community and the urban food actors.

On the one hand, it is possible to observe at the architectural scale that the physical proximity of urban public foodspaces does not imply their spatial continuity. This seems to be the case when dealing with rigid spatial boundaries between the foodspaces' interior and exterior that reduce their accessibility, visibility, and flexibility. At the urban and territorial scale, a

fragmentary and scattered edible foodscape emerges, denser towards the city's core while dispersed in its margins. On the other hand, this also suggests some scenarios for designing and reshaping the edible potential. Firstly, the boundary between the university and the city can be blurred by designing public 'food thresholds', namely spatial food sequences between the interior and the exterior public space, improving food spatial accessibility, visibility, and flexibility to increase the spatial continuity of food-related uses and practices. Secondly, disuses, leftovers, wasted, abandoned or marginal open spaces – both inside and outside university areas – can be transformed into hybrid foodspaces to implement the existing ones. Thirdly, a network of food nodes and foodways can be structured according to the mobility network, especially the soft one. Moreover, urban spaces could be the visible stage of an urban supply chain shortening, where placing various phases of the food system near each other may improve the food-system sustainability while attempting to bridge the rural-urban polarisation. Finally, urban foodspaces may be incrementally designed as convivial spaces, enriching them with devices encouraging sociality, progressively representing the stage for empowering food citizenship.

Food Atlas as an Instrument: Mapping Food Actors and Food Practices

The food mapping process investigated the actors and their food socio-spatial practices in the university's community and the urban food system by implementing non-structured and informal interviews, an eating habits survey distributed to the university's population and informal meetings with several food stakeholders. A relational diagram has been designed to make visible the food network. The actors in the urban food system are very heterogeneous in terms of scale, role in the phases of the food process, and the virtual and non-virtual networks of relations and practices that weave them together. They range from individual consumers to communities, associations, and student movements, varying from small and big enterprises to cooperatives to significant institutions and networks. Another specific aspect is the city's multiculturality, which highlights the heterogeneity of feeding cultures interacting differently.

The preliminary relational diagram consists of a matrix collecting horizontally the type of actors organised by scale (from micro and more minor actors to the more prominent stakeholders), vertically the sequence of phases of the food system whose an actor performs (as food production, food distribution, transformation, consumption, and disposal). Moreover, a notational system (with symbols, lines, and surfaces) qualifies the type of food practice and the stakeholders' relationships, aiming to highlight its spatiality and temporality. These relationships and interactions thus represent a central starting point within the food atlas mapping process since making visible the actors involved in the urban food system is seen as a core step in building "alliances between multiple stakeholders [that] can contribute to design, planning and implementing spatially bound food systems for all" (Bohn, Tomkins, 2024, 3).

On the one hand, soft food networks and relationships among minor and non-structured actors (such as associations, collectives, neighbourhood and place-based communities) have already emerged. However, they often represent specific niches that do not constitute a short food chain or a comprehensive foodway. On the other hand, among the prominent players (such as institutions, supermarket chains, and big enterprises), sustainable food practices appear segmented, focusing on limited phases of the food process. Moreover, some links between prominent players and minor actors, even though marginal compared to the whole urban food system, emerge (such as supermarkets' surpluses redistribution by associations and charity foundations), highlighting how complex and intricated food networks and relationships are.

Furthermore, the preliminary relational diagram raises the question of bridging players among the food system's actors. Considering the university's community as a cross-sectoral and cross-scalar agent, it seemed urgent to address explorative incremental scenarios of its engagement.

Food Atlas as a Process: Exploring Scenarios of the University's Incremental Agency

The initial findings of the food atlas mapping process brought to the exploration of the university's role, with different degrees of intensity: from facilitator and activator to catalyser, towards a leadership role in co-shaping the food-city nexus.

The first edible scenario explores a low-intensity role of the university, as a facilitator and activator. By redesigning its boundary with the city, the university can start expanding its agency from the food consumption phase to the others, experimenting with food circularity and socio-spatial practices. As a facilitator, the university can act as a system with the territorial actors to strengthen and expand existing flows and nodes in segments of short supply chains which are today disconnected from each other, to hypothesise one or more possible sustainable supply chains. As an activator, the university can create new nodes to differentiate the segments of existing short supply chains and extend the involved food system phases through local micro-actors' up-scaling processes.

The second scenario explores a medium-intensity role for the university, as a catalyst for food projects and practices. In this position, the university can experiment with innovative projects to create a network between and with local actors, multiplying and spreading the effects of the virtuous practices and projects already in place and exploring creative forms of short supply chains (e.g. a temporary market of local producers on Piazzale Europa campus). It envisages increasing interaction with local food actors and public city foodspaces such as the public markets and public social housing neighbourhoods, which may be activated as food hubs.

The third scenario explores a university's high-intensity and impactful role in co-shaping the food-city nexus. While expanding its agency from the food consumption to the distribution, processing, and disposal phase, the university can test a leadership role in the urban food system, experimenting with an urban food atlas and triggering local food policies and urban food plans. Strategic sites in this sense are the public city and public housing districts that could become off-campus university pilot projects.

Making visible edible cities: co-shaping food citizenship by design

Despite its fertile and widespread food tissue, Trieste's food-city nexus still emerges as a complex and multifaceted relation. On the one hand, the urban foodscape appears fragmented, spatially translating into a discontinuous relationship between foodspaces physically close by, both in the urban and the university context. Moreover, even though present in the university agenda, the food system is still scarcely investigated by the research and third mission activities. On the other hand, some – even though tiny – relationships among minor actors have emerged, suggesting their potential interest in seeing their agency intensified. The proportion between the city and the university population – the latter representing about 10% of urban citizens – also reveals a potential university's more acknowledged responsibility in the food knowledge creation and transmission process, while supporting and developing the existing food citizenship, including the university's spaces. This engagement process is represented by progressively more intense scenarios of the university's role in co-shaping the food-city nexus. These scenarios (facilitator, activator, catalyst, and leader) represent engagement intensity gradients rather than temporally consequential steps of responsibility. Even though today the University of Trieste is still playing an activator role, the creation of an interdisciplinary (yet not formalised) food working group – whose earliest minute results are occurring, such as a small educational event – may represent the first step towards the emplacement of university governance within the food-city nexus. To this respect, the emerging Trieste's food atlas still lacks integrating the nexus with other disciplines (which could be done by starting, for example, from the university food working group) and sharing learning and decision-making with the multifaceted food urban tissue, both representing necessary steps towards the creation of shared knowledge.

This food atlas – conceived as a tentative research process rather than a final product – thus highlights its multifaceted role. As an instrument, it produces shareable knowledge and mapping about the urban food system, highlighting existing relationships among food actors

and spaces from both the university and the city. The food atlas also potentially constitutes a context where actors and spaces can relate to each other through its representations and as an opportunity for the university to play an overlooked and critical role while emplacing its social and ethical responsibilities. It thus is also an incremental knowledge production process about and within the food system, an interface enabling food actors to share their planning ability, projects, and resources, while upscaling and emplacing their agency. Moreover, after activating a process such as the food atlas as understood in this contribution, defining an urban food policy does not come as a necessary consequence. The atlas can thus intervene in the urban tissue of practices and micro-strategies, generating an impact even before the food policy establishment as a governance device.

The specific design perspective offered a projective understanding of the food atlas. More than a fixed result of a dynamic and plural food mapping process, the food atlas allowed to mobilise several analytical tools and represent diverse viewpoints to make visible the spatiality, temporality, and agency of food, not just in its physical and socio-material dimension but triggering its projective potential, even just by initial design and scenario's thinking. Yet, exploring other design tools to address food actors' spatial imagination would enable deconstructing the conventional food system's representation in multiple and shared ways and drawing alternatives. Thus, the food atlas performs as a dynamic interface between food system multi-scalar and multi-foci representation, a participative, interdisciplinary and intersectoral process of knowledge production, and a tool to bridge food practices and actors across scales. In addition to a context, an instrument, and a process, the food atlas is a site for food politics negotiation and an empowering design research method to make visible citizens' food knowledge in the transition towards food sustainability as a collective practice.

Even though specific, the context of the food atlas experimentation suggests that it could be implemented in similar contexts, while analysing both the food atlas' methodological structure and the university's role within the process. Some aspects seem particularly relevant and could represent key comparing elements with other contexts. Firstly, many cities lack addressing local urban food policies but, at the same time, experience the rise of food citizenship. This suggests that the food atlas could be experimented with as a design research method to upscale existing practices' agency while potentially leading towards the definition of an urban food policy. Secondly, the quantitative importance of the university's community in a mid-sized urban dimension such as Trieste – common to other contexts – reveals the hypothesis of the university as a more active player in the urban food system, bridging food micro-politics and practices and triggering food politics and plans while informing, developing, and enabling its food citizenship. Finally, the city's frontier condition and, even more, its multiculturality represent a fertile context for comparison with other urban centres.

These aspects question again the food atlas as a design research method, involving its multiple dimensions. In the interdisciplinary debate, food emerges "as too fundamental, ephemeral or subjective to be controlled by a single professional discourse alone. This does not come as a surprise given the multitude of actions and stakeholders engaged and intertwined with the urban food system" (Bohn, Tomkins, 2024, 4). The food atlas' multiplicity engages at least two levels of interpretation. Firstly, its mapping, participating, and design process necessarily involves multiple disciplines, while engaging the various competencies from both the university and the professional tissue within the food-city nexus. Secondly, the subjectivity of perceptions and intimate relations with food suggest the existence of multiple edible cities within each single context. On the one hand, this strengthens the necessity for a collective process towards shared knowledge about the foodscape. On the other hand, the multiple edible cities intertwine and interact with each other, while continuously shaping, re-shaping, and potentially co-shaping – through a collective food atlas – the urban foodscape.

Bibliography

Bartlett, P. F. (2011) 'Campus Sustainable Food Projects: Critique and Engagement', *American Anthropologist*, 113 (1), pp. 101-115. Available at: https://www.jstor.org/stable/41407379 (Accessed: 15 May 2024).

Basso, S., Di Biagi, P. and Crupi, V. (2022) 'Downscaling Food System for the 'Public City' Regeneration. An Experience of Social Agriculture in Trieste', *Sustainability*, 14, 2769. https://doi.org/10.3390/su14052769.

Basso, S., Rodani, V. and Venturini, C. (2024) 'Decostruire immaginari per ripensare politiche e progetti. Cibo e rigenerazione urbana in Friuli Venezia Giulia', in *Proceedings of XXV SIU National Conference Società Italiana degli Urbanisti: Transitions, Spatial Justice and Territorial Planning*. Conference held in Cagliari, June 15-16 2023. Planum, SIU (forthcoming).

Bohn, K. and Tomkins, M. (eds.) (2024) *Urban Food Mapping. Making Visible the Edible City*. New York: Routledge. ISBN 9781032402819.

Cabannes, Y. and Marocchino, C. (eds.) (2018) *Integrating Food into Urban Planning*. Chicago: UCL Press. Available at: https://openknowledge.fao.org/server/api/core/bitstreams/0f7b5e22-5f9d-4087-a4ce-46fdffd79060/content (Accessed: 1 June 2024).

Carayannis, E. G. and Campbell, D. F. J. (2010) 'Triple helix, Quadruple helix and Quintuple helix and how do Knowledge, Innovation and the Environment relate To Each other? ', *International Journal of Social Ecology and Sustainable Development*, 1(1), pp. 41-69, January-March 2010. http://doi.org/10.4018/jsesd.2010010105.

Comune di Milano, Fondazione Cariplo and EStà (2018) *Il sistema del cibo a Milano. Approfondimenti tematici*. Milano. Available at: https://assesta.it/new-site/wp-content/uploads/2020/10/Il-Sistema-del-Cibo-a-Milano-approfondimenti-tematici.pdf (Accessed: 6 May 2024).

Dansero, E., Fassio, F. and Tamborrini, P. (2018) 'L'atlante del cibo: strumento, contesto e processo. Un'introduzione', in Dansero, E., Fassio, F. and Tamborrini, P. (eds.) *Atlante del cibo di Torino Metropolitana*. Torino: Lexis, pp. 13–19. Available at: https://www.celid.it/scheda-libro?aaref=1207 (Accessed: 1 June 2024).

Di Biagi, P. and Marchigiani, E. (2009) *Città pubbliche. Linee guida per la riqualificazione urbana*. Milan: Mondadori.

Di Biagi, P., Marchigiani, E. and Marin A. (2002) *Trieste '900. Edilizia sociale, urbanistica, architettura, Un secolo dalla fondazione dell'Ater*. Milan: Silvana Editoriale.

Dolphijn, R. (2004) *Foodscapes: Towards a Deleuzian Ethics of Consumption*. Utrecht: Eburon.

Marino, D. *et al.* (2022) *Atlante del cibo. Uno strumento per le politiche locali del cibo*. Città metropolitana di Roma Capitale, CURSA. Available at: https://static.cittametropolitanaroma.it/uploads/Atlante-DelCibo_CURSA_PSMCmRC_compressed-1.pdf (Accessed: 29 May 2024).

Parham, S. (2015) *Food and urbanism: the convivial city and a sustainable future*. London: Bloomsbury Academic.

Pothukuchi, K. and Kaufman, J.L. (2000) 'The food system', *Journal of the American Planning Association*, 66(2), pp. 113–124. https://doi.org/10.1080/01944360008976093.

Steel, C. (2008) *Hungry city: how food shapes our lives*. London: Vintage Books.

Verginella M. (2008), 'Il paradigma città/campagna e la rappresentazione dualistica di uno spazio multietnico', *Contemporanea*, 11:4, 779-792. https://www.jstor.org/stable/24653139.

Verzone, C. and Woods, C. (2020) *Food urbanism: typologies, strategies, case studies*. Basel: Birkhauser.

Viljoen, A., Bohn, K. and Howe, J. (2005), Continuous Productive Urban Landscapes: Designing Urban Agriculture for Sustainable Cities. Oxford: Architectural Press.

PAPER SESSION 1.E
INTERSECTIONALITY
AND FOOD
JUSTICE

Urban food governance's potential for a gender-just food transition: preliminary results from fieldwork in Milan and Barcelona

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Urban food governance's potential for a gender-just food transition: preliminary results from fieldwork in Milan and Barcelona

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Urban areas are increasingly adopting the tool of urban food policies (UFPs) to address food-related challenges, especially for a sustainable transition of their food systems. Indeed, food systems were assessed to have a great environmental impact, and cities are recognized as privileged actors to address this challenge. More recently, the problem of justice in such transition was raised. One dimension of vulnerability proven to crosscut all food system stages, and to increase exposure to climate change effects, is gender. However, literature on just food transition and UFPs does not seem to always consider this dimension of potential vulnerability. This paper draws on previous work I conducted that preliminarily assessed the lack of attention to gender differences in a relevant selection of UFPs demonstrating that, although theory seems to prove its relevance, a gender mainstreaming approach is still widely lacking from policy practice and, rather, some policies risk reinforcing existing gender stereotypes related to the food system, for example by only paying specific attention to women's needs in relation to their role of mothers. The paper also presents some preliminary results of the fieldwork investigating how relevant actors – both institutional and from civil organizations – in Milan and Barcelona understand gender differences in food systems and the potentialities that a collaboration between top-down and bottom-up initiatives bring about for a more gender equal urban food system. The contribution aims, firstly, at consolidating the idea that food governance should inherently take gender differences into consideration, as well as exploring whether and how different actors in two pioneering cities in the context of Southern Europe are currently understanding these differences compared to what literature deems relevant. Through this exploration, the study is expected to broaden the existing knowledge on the potential of urban governance to contribute not only to a more environmentally sustainable food system, but at the same time to a more gender equal one, thus guaranteeing a more gender-just food transition. The paper ends by describing the expected final results of the study and further research suggestions about potentially relevant aspects that have come up during fieldwork and would be worthy of a deeper exploration.

Keywords: gender mainstreaming, urban food governance, food transition.

Gender in food systems

The topic of gender differences in all stages of the food system (FS) has been explored in literature from many disciplines, albeit with some domains still receiving larger and more systematic attention than others, such as bodily politics and gendered eating patterns in comparison to sociocultural and power-related discourses (Avakian and Haber, 2005; Allen and Sachs, 2007; Njuki *et al.*, 2022; Bergonzini, 2024b). The OECD (2022) identified three main domains of gender discrimination related to the various roles women play in the FS – entrepreneurs, workers, consumers – and presented evidence showing existing differences based on gender within all three, while also lamenting a general lack of gender-disaggregated data to further explore such phenomena. However, this report is ignoring a role that literature regards as the most gendered in the whole FS: the role of carers, related to the reproductive, unofficial (and thus unpaid and unrecognized) work aimed at household nutrition, which has historically and culturally weighed on women's shoulder disproportionately, and interconnects with discourses of power dynamics, gender roles and also perceived belonging to private spaces, as opposed to public (DeVault, 1994; Van Esterik, 1999; Allen and Sachs, 2007; Williams-Forson and Counihan, 2011). The lack of attention to this relevant domain of the FS on the part of an international organization report precisely on the topic of gender in FS arguably shows how little recognition is still dedicated to matters that concern daily life practices by governance actors (Vaiou and Lykogianni, 2006), and in the FS this mainly refers to activities that are still highly gendered and regarded as feminine.

Research on gender implications in FS also tends to disproportionately address case studies in LMICs and indeed academics have started warning against the risk of overlooking the Global North in this discussion (Riley and Hovorka, 2015; Njuki *et al.*, 2022), for example by assuming the problem is not relevant in this context (McPhail, Beagan and Chapman, 2012), or by expanding the conclusions drawn from empirical work in the Global South to the Global North without critically situating such results. Indeed, the types of gender discrimination that happen in different contexts can vary greatly, since gender discrimination is "never pure" (Halliday, 2022, p. 6) and rather it is shaped by its interconnection with other axes like class, religion, socioeconomic status, ability, age and more.

In brief, gender differences were proven to exist in all stages of the FS and research on the topic is advancing, but gaps persist, such as a predominance of abstract studies that tend not to be situated into concrete contexts, a focus on the Global South, and a tendency to only account for a binary view of gender.

Gender mainstreaming in UFPs

In preliminary studies of the topic I conducted, urban food governance and its (so far underexploited) potential in addressing gender differences in FS emerged as a particularly promising field (Bergonzini, 2024b), although an analysis of 20 relevant cases of UFPs demonstrated that gender equality is not sufficiently addressed in policy practice (Bergonzini, 2024a; Edwards, Sonnino and López Cifuentes, 2024), and a gender mainstreaming approach (European Institute for Gender Equality, 2023) is widely lacking.

Specifically, the analysis showed that most policies do not mention the need to account for gender differences at all, and out of the few examples that explicitly consider women's needs, most policies focus on their role of mothers, by addressing topics such as the importance of nutrition during pregnancy and of women's education on nutrition to guarantee children's food security and health. While these are important objectives, by only accounting for women's experiences in such context (and only mentioning mothers' role in granting children's food security instead of both parents') these policies risk reinforcing gender stereotypes that see the reproductive work related to household nutrition as a feminine task, as well as directly linking children's nutrition and health to women's responsibility (DeVault, 1994; Van Esterik, 1999).

However, the analysis also highlighted some best-practice cases, namely the UFPs of Barcelona and, even more, Zaragoza. These policies have a specific gender equality goal and highlight gender differences in most of their other goals, too, while also accounting for gender representation in the governance of the project. Moreover, Zaragoza's policy explicitly carried out a gender mainstreaming process, although the final result was considered less ambitious than some civil actors who took part in the drafting process were hoping for (Di Masso *et al.*, 2022). These documents interestingly never mention women's role as mothers, and rather Zaragoza's UFP explicitly warns against taking for granted that children's and household nutrition are women's responsibility.

Both policies were the result of participatory processes, although only Zaragoza's was studied in a scientific paper (Di Masso *et al.*, 2022), while Barcelona's process is described in municipal documents (Ajuntament de Barcelona and PEMB, 2022). In both cases, the relevance of civil actors' participation is highlighted, with Zaragoza's *enfoque de género* being the result of a bottom-up suggestion. Therefore, these best-practices confirm the potential of the dialogue among different levels of urban food governance and actors in addressing the challenges related to urban food systems transformation in a more integrated manner, as scholars had already suggested although not with a focus on gender equality (Sonnino and Marsden, 2006; Rossi and Brunori, 2010; Matacena, 2016).

Preliminary results from fieldwork in Barcelona and Milan

Focus of the study

The previous paragraphs presented the background against which the focus and research questions leading my current fieldwork were developed.

The two cities chosen for the comparison are Milan and Barcelona, as they are both active on the international stage of cities engaging in urban food governance – Milan is a pioneer city since it launched the Milan Urban Food Policy Pact in 2015, Barcelona hosted the 7th Global Forum of the MUFPP in 2021 together with the project Barcelona World Capital of Sustainable Food –, they are both located in Southern Europe, a context that is underexplored from the point of view of gender differences in FS and FS governance (Riley and Hovorka, 2015; Njuki *et al.*, 2022), but they also present relevant differences. The first and most striking is that Barcelona's UFP explicitly addresses gender equality, while Milan's does not. Also, Barcelona recently underwent a change of administration, leading to the appointment of Jaume Collboni (PSC) as mayor instead of Ada Colau (Barcelona en comú), who was in charge when the UFP was drafted, while Milan has had the same mayor since the food policy became effective. Indeed, research has shown that administration changes and the consequent instability of political commitment to topics such as the food transition is one of the most relevant hindering factors for UFPs effectiveness (Sonnino, Tegoni and De Cunto, 2019). Lastly, both cities host a variety of grassroot initiatives acting on food innovation.

The study focuses on two aspects. Firstly, on the understanding different levels of urban governance have of gender differences in FS – do they take them into account in their actions? What type of gender difference is more relevant in their activities? Do they address them in practice, and how? – in order to situate the discourse in the chosen contexts by detecting what gender differences are more relevant in Barcelona and Milan and how well key actors understand them. Secondly, it focuses on the dialogue between the institutional level of governance (especially represented by the team in charge of the UFP but not limited to it), and the grassroot initiatives in the cities (the so-called alternative food networks, AFNs) – do they collaborate or are they in competition? Do they think they have the same vision, or do they feel like they are working towards different goals? What is the potential of such dialogue? Did the change in Barcelona's administration impact this dialogue?

Through interviews with representatives of both categories (UFPs and AFNs), the study's aim is to understand what concrete actions are being carried out, whether there is an actual difference in results between Barcelona, whose UFP explicitly mentions the intention to strive for a gender-equal FS, and Milan, whose UFP does not, and what potential is held by the "interstitial space" (Matacena, 2016) of dialogue between institutional and civil urban food governance actors.

Barcelona

Fieldwork in Barcelona is underway but has so far included interviews with 5 representatives of institutions (Ajuntament de Barcelona, Àrea Metropolitana de Barcelona, Oficina Conjunta de l'Alimentació Sostenible) and 6 members of different AFNs. The interviews regarded the two themes of gender differences within the interviewee's activities and strategies to address them, and relations with other actors of the urban food transition.

So far, all interviewees belonging to the team that worked on Barcelona's UFP (interviews 8, 10, 13) confirmed that mentioning gender equality as one of the challenges that food systems transformation must address was not the result of a specific intention to account for gender differences in the UFP, but rather a spontaneous addition to a list of topics that Spanish public policies are used to addressing, without a real strategy to operationalize this objective. Also, one interviewee (13) noticed how the administration of the time, led by Barcelona en comú, was particularly attentive to feminist claims and its gender equality department made sure all policies at least mentioned this topic. However, they all agree that the presence of this goal in

the UFP was never central to the discussion or to the participation process, and rather interviewee 8 was surprised I was bringing the example of Barcelona as a good practice since their perception was that of an insufficiently addressed theme. No one remembered any intervention by participants in the consultation process that mentioned this issue, either. Interviewees 2 and 3, from the Àrea Metropolitana – thus not directly involved in the UFP but more so in the CARM (Carta Alimentaria de la Región Metropolitana de Barcelona) and in dialogue with the Ajuntament – confirmed the same vision according to which most Spanish public policies mention the need to strive for gender equality as one more "checklist" point, not necessarily meaning that it becomes an empty aim, but still warning that not always this corresponds to a concrete operationalization. Lastly, as for gender representation within institutional teams working on the UFP and in the participation process, they all agreed that data showed a majority of women, but no further investigation has been carried out to learn why.

Regarding the governance dialogue between different institutional levels and toward AFNs, all interviewees agreed on the importance of a coordination and collaboration, but that this is no easy task. Interviewee 13 had the most positive view of civil organizations' participation in the drafting process, stating that the impact of their opinions was indeed perceived and decisive. Instead, interviewees 8 and 10 said that while the participation process was ultimately a success, most themes and actions had been decided beforehand by the technical team of the Ajuntament based on pre-existing guidelines, such as the MUFPP framework, and the participation process was mostly aimed at validating them, networking, and brainstorming ideas about actors' vision of what direction the food transition of Barcelona should take. They both commented that indeed bottom-up participation is important but difficult to carry out, for reasons such as lack of time on the part of AFNs representatives, who often would have to dedicate their free time to this process, or lack of trust of the most radical AFNs in the transformative potential of institutions.

Another relevant topic is multilevel governance relations, and all interviewees agreed that the different levels of governance influencing the city of Barcelona (Ajuntament, Àrea Metropolitana, Diputació de Barcelona, Generalitat de Catalunya) did not initially coordinate on the topic of the food transition. According to interviewee 13, such coordination began in 2021, when Barcelona was World Capital of Sustainable Food, hosted the MUFPP Global Forum, and launched the drafting process of its UFP. More specifically, the Ajuntament wanted to exploit the opportunity of these events to raise awareness about the theme of food sustainability and create a strategy, but it was also aware of its own legislative limits, since Spanish municipalities hold little power over relevant themes related to food. For this reason, the team got in touch with the Generalitat, that holds more legislative power, and had already drafted the PEAC – Pla Estratègic de l'Alimentació de Catalunya. According to interviewee 13, at that time the Ajuntament had a stronger investment in the theme, but the Generalitat has a stronger power, and this allowed the opening a fruitful dialogue that led, in January 2023, to the launch of the Oficina Conjunta de l'Alimentació Sostenible, which is a coordination body between Ajuntament and Generalitat. Interviewee 13 commented that while it was difficult, at first, to teach representatives of these two big institutional bodies to collaborate and share information, in the end the effort was successful and at the moment dialogue is swift. All interviewees agree that such effort on the Ajuntament part was possible because of the then mayor Ada Colau and her party's investment in the topic. With the administration change, although no strategy or plan was stopped, they all perceived much less political interest. However, interviewee 8 sees positively the fact that technicians and professionals working for the UFP have not changed, so even though they now perceive a "diluted" political investment in the topic, they were able to carry on with their activities.

From the bottom-up perspective, opinions are more varied, as the interviewed AFNs are quite different from each other. Interviewees 4 and 5 are from a local *grupo de consumo* (cooperatives of consumption), 6 from an urban agriculture initiative, 7 from Slow Food's

organic farmers market, 9 from a food waste recollection project and also founder of a cooperative market, and 12 from a neighborhood kitchen that organizes various activities.

Regarding attention to gender differences, interviewee 6 was the only truly committed case, as a representative of an urban agriculture initiative belonging to a feminist collective that manages various activities and whose aim is not related to food systems transformation, but rather education about the fact that growing plants and caring about earth is a feminist practice. Therefore, while their activities are indeed very attentive to gender differences (and only open to women) and show how the activities of many other AFNs could self-define as feminist if they had the necessary awareness, it would be wrong to state that they, as a collective, are working for a more gender equal food system. Interviewees 9 and 12 both mentioned that most participants to their activities are women, but they have not wondered why, although interviewee 9 commented that it is probably related to the fact that food is connected to care activities, which are traditionally more feminine. Interviewee 7 said they have a gender equality criterion among other criteria they use to assess the sustainability of producers who want to take part in their market, but it's mostly for data collection and not a cause for exclusion in case of a negative assessment. Also, they have an all-female directive team on purpose, but they have not brought up this topic to the Ajuntament during the UFP participation process to which they took part. Interviewees 4 and 5 belong to the same AFN but interestingly, while 4 (a male) felt the topic was not central to their activity, 5 (a female) told me about a caring committee they recently created following a case of harassment, whose members are all female (not on purpose, but she guessed they are more interested in the topic). Also, although she admitted to never thinking about it, during the interview she started pondering about how their activities could be seen as feminist as they represent an act of care, but also stated that to openly self-define as a feminist AFN much more internal work and discussion should be carried out. In general, though, no interviewee demonstrated a specific knowledge or strategy to address gender differences in the food system area they act upon.

Out of these, interviewee 7 was the only one who took part in the UFP participation process, but admitted to having little hope for the transformation potential it holds. Interviewees 4, 5 and 9 did not participate, but all shared the opinion that the UFP is not going to lead to a real FS transformation. Also, together with interviewee 6, they all shared that while some sort of dialogue with the Ajuntament exists – mostly in terms of funding (6, 9), granting of spaces (6, 9), or simple acknowledgement of the activity's role in the neighborhood (4, 5, 9) – they do not aim at a structured collaboration, as they fear a co-optation process or simply losing the bottom-up nature of their activities. Also, they (4, 5, 6, 9) share the opinion that following the administration change, attention to the topic of food sustainability (and gender equality, according to interviewee 6) has decreased significantly. Interviewee 12 is slightly different, since their activity was born with the aim of creating a space for socialization between the inhabitants of the neighborhood and not with a specific aim of FS transformation, as they state: "cooking is an excuse [for socialization]". Therefore, they simply acknowledged the Ajuntament's role in funding them and providing the space.

In summary, institutions have so far demonstrated a more hopeful view of collaboration with AFNs than vice versa, and attention to gender differences seems limited, except for the case whose main goal is gender equality and later engaged in some FS-related activity. Therefore, although a space of dialogue surely exists, it seems to be mostly promoted in a top-down manner and the potentiality for it to create a more gender equal urban FS seems low, according to the current state of the research.

Milan

Fieldwork in Milan is less developed as I have so far carried out only two interviews, with two male volunteers from two, quite different AFNs. One (interview 1) is a food distribution activity aimed at some specific, fragile neighborhoods that was born in the context of a squatted social center. The other (interview 2) is a food waste recollection activity that uses leftover food for

cooking workshops led by cooks with an immigration background, and was born through a call for projects funded by the municipality itself.

Regarding gender differences, interviewee 1 said that while they self-define as a feminist association, they had never analyzed gender implications and representation in their food distribution activity. He told me that most recipients of the food box are women and guessed that it might be related to cultural and traditional family roles that see women as in charge of household nutrition, but they never investigated it specifically. Also, he admitted that although they have sometimes engaged in discussions about what it means to be a feminist association, they never built a strategy to operationalize this ideal into their actions. Interviewee 2 told me his AFN never considered gender differences in planning their actions, but indeed noticed that most people applying for the position of cook were women, so empirical application of their plan made them realize that their activity could not only represent a food waste recollection project, but also an empowerment occasion for unemployed women with a migration background, who can find in this activity their first paid job and a socialization and networking opportunity. However, he says that this was an unexpected consequence of their initial project, and they are still not stating it as an explicit goal, nor trying to make it structural.

As for relations with institutions, interviewee 1 says that they are not looking for any type of official collaboration, since the food distribution activity falls within a larger political project and they feel politically conflictual towards the administration. However, they have accepted to collaborate for some specific projects, for example during the pandemic the municipality asked for their help to reach some communities with whom they had already built a trustworthy relationship, and since they shared the vision and objectives of this specific action, they accepted. In the long term, though, they want no structural collaboration. On the contrary, interviewee 2 says that his AFN would like to collaborate much more with the municipality, and especially with the UFP office, but so far, his perception was that of a "closed circle of actors" that are already working on the urban food transition and are not willing to let in "foreign", newer and smaller actors like them.

Clearly, such results are insufficient to draw any type of conclusion, but currently the partial picture seems to suggest an unmet potential for collaboration and a general lack of awareness about FS' relevance for gender equality.

Expected results

As mentioned, the research is still underway, and so is the analysis of the completed interviews. The expectation is to be able to reconstruct the relations between the various, formal and informal levels of urban food governance acting in the two cities and possibly build a framework of types of relations that characterize the so-called interstitial space between institutional and civil action, to understand where the most transformative potential rests. Also, the study aims at detailing better which main difficulties hinder dialogue in this specific field and what strategies actors have so far implemented to overcome them. Lastly, a deeper understanding is expected of how gender differences are considered and dealt with by different actors of the field and of what capabilities are still missing for them to receive more attention in urban food transition strategies.

Bibliography

Ajuntament de Barcelona and PEMB (2022) *Informe final del procés participatiu de l'estratègia d'alimentació sostenible Barcelona 2030*. Available at: https://www.decidim.barcelona/processes/estrategiaalimentaciosostenible (Accessed: 21 May 2024)

Allen, P. and Sachs, C. (2007) 'Women and food Chains: The gendered politics of food', *The International Journal of Sociology of Agriculture and Food*, pp. 1-23.

Avakian, A.V. and Haber, B. (2005) 'Feminist food studies: A brief history', in A.V. Avakian and B. Haber (eds), *From Betty Crocker to feminist food studies: Critical perspectives on women and food*. Amherst: University of Massachussets Press.

Bergonzini, C. (2024a) 'Just food transition: for a gender mainstreaming approach in urban food policies. A review of 20 cities', *Cities*, 148, p. 104876.

Bergonzini, C. (2024b) 'The food-gender-cities nexus: a research agenda', *Food, Culture & Society*, pp. 1–17.

DeVault, M.L. (1994) *Feeding the family: The social organization of caring as gendered work*. Chicago: University of Chicago Press.

Di Masso, M. *et al*. (2022) 'Taking food out the private sphere? Addressing gender relations in urban food policy', *Agroecology and Sustainable Food Systems*, 46(1), pp. 108–132.

Edwards, F., Sonnino, R. and López Cifuentes, M. (2024) 'Connecting the dots: Integrating food policies towards food system transformation', *Environmental Science & Policy*, 156, p. 103735.

European Institute for Gender Equality (2023) *What is gender mainstreaming*. Available at: https://eige.europa.eu/gender-mainstreaming/what-is-gender-mainstreaming (Accessed: 21 May 2024)

Halliday, J. (2022) 'Urban food systems: the case for municipal action', in C. Sage (ed), *A Research Agenda for Food Systems*. Cheltenham: Edward Elgar.

Matacena, R. (2016) 'Linking alternative food networks and urban food policy: a step forward in the transition towards a sustainable and equitable food system?', *International Review of Social Research*, 6.

McPhail, D., Beagan, B. and Chapman, G.E. (2012) '"I don't want to be sexist but…"', *Food, Culture & Society*, 15(3), pp. 473–489.

Njuki, J. et al. (2022) 'A review of evidence on gender equality, women's empowerment, and food systems', *Global Food Security*, 33, p. 100622.

OECD (2022) *Gender and food systems: overcoming evidence gaps*. Available at: https://www.oecd.org/publications/gender-and-food-systems-355ba4ee-en.htm (Accessed: 21 May 2024)

Riley, L. and Hovorka, A. (2015) 'Gendering urban food strategies across multiple scales', in H. De Zeeuw and P. Drechsel (eds) *Cities and agriculture: Developing resilient urban food systems*. New York: Routledge, pp. 336–357.

Sonnino, R., Tegoni, C.L.S. and De Cunto, A. (2019) 'The challenge of systemic food change: Insights from cities', *Cities*, 85, pp. 110–116.

Vaiou, D. and Lykogianni, R. (2006) 'Women, neighbourhoods and everyday life', *Urban Studies*, 43(4), pp. 731–743.

Van Esterik, P. (1999) 'Right to food; right to feed; right to be fed. The intersection of women's rights and the right to food', *Agriculture and Human Values*, (16), pp. 225–232.

Williams-Forson, P.A. and Counihan, C. (eds) (2011) *Taking food public: Redefining foodways in a changing world.* New York: Routledge.

Intersectional Exploration for Food Justice Initiatives in France

— LALLIOT Manon

Intersectionnal Exploration for Food justice Initiatives in France

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At the start of a thesis exploring the emerging dynamics of 'food democracy' (Paturel, Ndiaye, 2020). I wanted to explore these issues through the prism of intersectional and radical analysis. Focusing in particular on associations that aim to improve the diet of the most vulnerable populations, my initial work highlighted a paradox: although these initiatives claim to be about food 'democracy', they often face difficulties in mobilizing the residents of working-class neighborhoods, even though they are the most affected by these issues of precariousness, in this case food precariousness. They are often confronted by white volunteers and employees with far more educational and economic capital than the beneficiaries they serve. By adopting an intersectional approach, this research aims to enrich the dialogue between Anglophone and Francophone academic worlds, while providing crucial perspectives on food democracy in a context of growing food insecurity in France. An in-depth analysis, inspired by radical perspectives in Anglophone literature, highlights race-related aspects, particularly the critique of the 'whiteness' of food movements in the United States (Guthman, 2008; Howerton, 2017). Although little represented in French literature, connections are emerging between these radical approaches and the concerns of associations and working-class neighbourhoods in France, often in the creation of a porous boundary between the worlds of research and activism. Figures such as Fatima Ouassak (2020; 2023), involved in inclusive and socially diverse initiatives, bear witness to these concerns. An initial series of exploratory interviews was conducted in the Île-de-France region during the first year of the thesis and the master's course. These interviews focused on the discourses and biographical trajectories of the people involved in these associations and collectives, and constitute a first step towards understanding the social and discursive dynamics of these initiatives.

Keywords: Food accessibility; Alternative food initiatives; Intersectionality

In this paper, I will attempt to share my early thesis reflections on the growing number of food democracy initiatives in France, through the prism of intersectionality. To do this, I'll start with an introduction to my background and research materials.

My methodology is essentially qualitative. In fact, I've been involved in associations fighting for the right to quality food for just under 10 years. I started out as a volunteer with Caritas (Secours Catholique in France), helping to prepare breakfasts every Saturday morning for the homeless, then a few years later I was a civic service worker in a solidarity grocery store where I was in charge of a solidarity vegetable basket system where people paid according to their income. Although these early experiences were not carried out with a view to collecting data, they did enable me to gather observations based on real-life experiences, which I am using as material for my thesis. Once I was in first year of Master's degree in geography, I did an action-research placement with the AMAP[1] network in the Ile-de-France region, looking at gender relations and the socio-economic accessibility of the AMAP model. I carried out a quantitative survey of over 2,000 members, as well as several semi-structured interviews and observations. The following year, in the second year of my Master's degree, I carried out another action-research internship on a shared kitchen and garden project in a working-class neighborhood in Seine-St-Denis[2]. I carried out group interviews with groups of people in various precarious situations, as well as individual interviews with the various players involved in the project, and numerous observations during cooking and/or gardening workshops, and project meetings. During this last experience, mobilizing local residents was particularly difficult, so I decided to redirect my questioning towards the project players

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[1] AMAP: Association Pour le Maintien d'Une Agriculture Paysanne, the French equivalent of Community Shared Agriculture, is an economic pact between a group of consumers and one or more farmers.

[2] Seine-Saint-Denis is a French department north of Paris, known for having the highest indicators of poverty (income and unemployment). The commune and district of the project are not specified for reasons of anonymity.

themselves, and why they wanted to "bring healthy and sustainable food" to these populations. At the same time, through my English-language reading, I discovered an analysis based on the concept of intersectionality, which went further than a simple explanation of socio-economic class, and called into question the power relationships existing between beneficiaries and workers in organizations promoting food justice initiatives. As a result, during the first year of my thesis, I decided to carry out a series of semi-structured interviews (around 40) with various players in the 'food democracy' or right to food movement: employees of local initiatives, volunteers (more or less involved), social workers, employees of national or regional networks, and public institutions, as well as a few field observations when the opportunity arose.These various experiences led me to ask myself several questions for this thesis, including one I'd like to develop with you here :

To what extent can the intersectional prism of analysis provide us with tools for understanding the difficult mobilization and involvement of people in 'food insecurity' within movements in favor of a dignified right to food?

Initially, we will attempt to provide descriptives elements around the notion of 'food democracy' and the groups that gravitate around it in France, its construction, and its current stakes. Then, based on the discourses of these different actors, we will apply an intersectional analysis : paying attention to questions of gender and class, but above all to an aspect that is less often evoked in France, the prism of social relations of race . Finally, we'll devote a final section to the possibility of a "class alliance" through 'food democracy' initiatives.

Some background and definitions about food democracy

To begin this paper, I wanted to attempt a typology of the 'cause space' or '*espace de la cause*' in French, to borrow a phrase from Laure Bereni (2012), an analysis through the materials previously presented in my introduction.

'Food democracy' is a concept introduced by Tim Lang in 1998 to denounce the purely nutritional prism through which the issue of food insecurity was viewed. He therefore wished to put more emphasis on the holistic aspect of food, in societal, social, health, cultural and other terms (Paturel, Ndiaye 2020). It was then imported to France by Dominique Paturel. The recent work by Yuna Chiffoleau, Dominique Paturel, Estelle Bienabe, Sarah Millet-Amrani and Grégori Akermann (2022), attempts to take stock of the use of the concept of food democracy. What's special about this term is that it is increasingly present in scientific literature, as well as being used in local initiatives such as the most frequently cited: PATs[3], cooperative enterprises and SSAs[4]. Although food democracy seems to be defined differently depending on the discipline, scientists seem to agree on two points of definition: The regaining of power by citizens over the food system (from its agricultural production to its consumption, via its processing and distribution), and the fact of deciding together through a democratic process (more direct and participatory) on the operation of this food system. Even so, the contours of this concept remain unclear, making it often synonymous with other concepts such as food solidarity or food justice. On the whole, this concept has been gaining ground in recent years, and is increasingly used by local authorities at various levels, as well as by civil society through associations, for example.

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[3] PAT: *Plan Alimentaire Territorial* (Territorial Food Plan)

[4] SSA: *Sécurité Sociale de l'Alimentation* (Social Security for Food), inspired by the health social security in France, the militants of this collective what to apply it for the food system.

In fact, around this objective of regaining decision-making power over the food system, and more explicitly around the concept of 'food democracy', we are witnessing new networking between different players at different scales. On a national scale, for example, we can cite the "*Territoires à Vivres:* territorial experiments in cooperation for dignified access to quality food" project, which will bring together five national players by the end of 2019: Secours Catholique, an association helping the poor; the Cocagne and CIVAM[5] networks, which promote sustainable agriculture; the VRAC network, which brings together purchasing groups present in working-class neighborhoods; and UGESS[6], a network of solidarity and/or social grocery stores. This project is taking place in four areas: Lyon, Aix-Marseilles, Montpellier and Toulouse/Haute-Garonne. On a metropolitan scale, it is also networking various players in the food system. In Montpellier, for example, the VRAC[7] network and *Cocinas* (collective kitchens) are linked with a local CIVAM. At these different levels, we can see that associative actors in peasant agriculture, associations fighting against precariousness or promoting sustainable food, who weren't particularly connected ten years ago, are now linked.

On the one hand, there seem to be associations that promote food and sustainable agriculture (such as AMAPs, cooperatives, CIVAMs, shared gardens...) who are aware that their members-consumers are privileged (Montrieux, 2016; Ripoll, 2013; Paranthoën, 2013; Lamine, 2008), and decide to move towards accessibility for more marginalized people. On the other hand, some of France's best-known associations in the fight against food insecurity, such as Secours Catholique, Restau du Cœur and food banks, are developing a critical eye for the dignified reception of beneficiaries and food quality (B.Bonzi, 2019).

In recent years, has seen a convergence of these two associative spaces around projects claiming to be about 'food democracy', which has been made possible by paradigm shifts in both camps. It's also interesting to note that the presence of researchers and action-research projects have contributed significantly to this convergence. Indeed, the boundary between research and action seems very thin within these movements around food democracy .

"Quality food accessible to all"; for whom ? And by whom ?

As we have seen, these initiatives and collectives want to "make quality food accessible to all". However, it's important to ask who this "all and sundry" refers to? In my interviews and documentation, many people specified that they wanted to create a space for social mixing through their initiatives. However, in my field experience, where I was able to witness the implementation of projects 'from the inside', there was often talk of targeting a particular public, in a more or less precise way: teenagers, single mothers, isolated people, local residents and others.

As explained in the introduction during my second-year Master's thesis, I worked on a project in a very working-class district of Seine-Saint-Denis, in which I set up group interviews with local associations to find out about their experiences and expectations regarding food. It became clear that the profiles of those present, apart from the fact that they were almost all women, was very diverse:

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[5] CIVAM: Grouping of various farmer collectives or associations (CIVAMs) based on the principle of popular education. The network's main vocation is advocacy, and to act as a link between the various CIVAMs present in France.

[6] UGESS: *Union des épiceries Solidaires et Sociales* (Union of Solidarity and Social Grocery Stores)

[7] VRAC: *Vers un Réseau d'Achat en Commun*, which means: Towards a common purchasing network

Profile 1 of a beneficiary and participant: mother of two young children, single, newcomer immigrant (for just under a year), living in a social hotel in a neighboring town in Seine-Saint Denis, French-speaking, Senegalese, waiting for her administrative situation to be regularized, who nevertheless has difficulty expressing herself and understanding metropolitan French fluently, and has no economic resources of her own.

Profile 2 beneficiary and participant: single woman without children, lives in a small house in the commune, multiple health problems, French, white, metropolitan French is her mother tongue, with few economic resources (RSA[8] and relatives), no higher education.

Profile 3 trainee animator and participant: Mother of two young children, French, black, trainee in the association where we she was finishing her second year degree diploma, lives in a HLM[9] in the neighboring town of Seine-Saint-Denis, with limited economic resources, metropolitan French is her mother tongue.

Among the group interview leaders and the project team, I felt it was important not to exclude ourselves from the analysis in the perspective of doing 'food democracy':

Profile 4 trainee-researcher (My self): childless woman, French, white, finishing her fifth year's master diploma, lives in a university housing estate in Paris, average economic resources (trainee salary and family help), metropolitan French is my mother tongue, parents in intermediate health professions.

Profile 5 Project manager for the association behind the project: Childless woman, in a couple, métisse[10], Franco-Senegalese, recently moved into a house in a neighboring commune in Seine-Saint-Denis, significant economic resources thanks to her full-time CDI [11]with the association, metropolitan French is her mother tongue, master degree, attended the lycée français in Dakar, parents in the higher intellectual professions.

Far from being a cumulative or even essentialist approach to oppression (Bilge, Hill Collins, 2023), adopting an intersectional analysis enables us to situate investigative individuals within social relations. Through various sociological elements, be they administrative, gender, socio-economic, geographical or racial, we can attempt to account for the experience of subjects as being at the intersection between dominant and dominated categories (Nash, 2008; Hancock, 2007; hooks, 1981). As we can see from the profiles we met, simple analysis of socio-economic class or even race relations is not enough. Indeed, the Senegalese woman (profile 1) may share the same country of origin, gender and racialized position as the woman in charge of the project (profile 5), but they have absolutely different socio-economic, cultural and educational capital, which results in totally different positions in the space of 'food democracy'. One (profile 5) writes responses to calls for projects and builds an initiative to make sustainable, dignified food accessible, while the other (profile 1) is the recepient of it. Although strongly encouraged to do so by the associative workers, profile 1 is unable to invest additional time in the construction of this project, as she is in a situation of "survival" in her daily life and therefore has little time available, and her academic skills and fluency of the metropolitan French language and writing do not enable her to take an equal

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[8] RSA: *Revenu de Solidarité Active* (Active Solidarity Income) is a minimum benefit for unemployed people in France.

[9] HLM: *Habitation à Loyer Modéré*, social housing, built with the help of the French state and intended for low- to medium-income households.

[10] *Métisse* (feminine) or *métis* (masculine): word in French to designate someone who's born from a racial mixed couple

[11] CDI: *Contrat à Durée Indéterminé* (open-ended contract)

part in internal debates within the associations or even in the drafting of a project. Profile 5, on the other hand, has studied with a view to working in the ESS[12] and setting up projects, and is paid to carry out this work as part of her job. Similarly, there are wide differences between beneficiaries in terms of their ability to become participants (real and not just consultative). Profile 2, for example, although also in a situation of heavy dependence on food aid, nonetheless has a home of her own, as well as a network of local acquaintances, plus a fluency in language and writing, which would enable it more easily to join a local "food democracy" initiative than profile 1.

Faced with this observation, it seemed obvious to me that the challenge of 'food accessibility' and of creating a real, concrete 'food democracy' goes beyond a simple problem of different purchasing power or "living standards", and requires an understanding of the different power relationships that run through each individual , and explain the position of each individual in a given space, in this case that of 'food democracy' between those who make it and those for whom it is intended.

"One public drives out another"? Is it possible to question the whiteness of food democracy initiatives in France?

Moreover, the use of the concept of 'intersectionality' sheds light on social relations of race. This aspect has long been present in English-language literature, especially from the USA on food justice initiatives (Guthman, 2008a; 2008b; Howerton, 2017). Most are highly critical, highlighting the whiteness of these movements. Only in the French academic literature on food does this subject still seem to receive too little attention (Hourcade, McClintock, 2023). In my interviews and action research experience, most actors speak easily and are self-critical of gender or class issues within their collectives, but talking about the absence of certain racial minorities is complex.

To give an example, in a medium-sized French metropolis, a project for a place of justice and food democracy is part of an urban gentrification project. Having visited for field observations, but also in a personal capacity, it's easy to see that it's mainly frequented by white, well-off people and executives working nearby. However, it's also an area of the city that used to be working-class and particularly mixed, and its prices are in line with those of other shops. During the interview with the place manager, several factors seemed to explain the absence of working-class and racialized residents. Firstly, the place was designed and built by people belonging to a cultural elite and local whites, and the aesthetic preferences, present both in the decorative layout of the space and in the menu, do not necessarily correspond to other social groups. As local social workers often say: "one public drives out another", in other words, the aesthetic and dietary tastes of one social group mark the 'accepted' identity, or otherwise, of a space. However, this mix doesn't seem to be out of reach since by chance a round table discussion on the question of Palestine brought people who had never been to that place before, notably a Muslim community and a racialized one from the neighborhood.

This anecdote raises an interesting hypothesis to partially explain the absence of public debate on sustainable and democratic food issues. Indeed, as Fatima Ouassak (2021,2023) develops, the struggles and issues of neighborhoods and their residents are not integrated into these initiatives , such as anti-racism, police violence, pro-Palestinian issues, colonial memory... etc., and could be the cause of a lack of mobilization and commitment on the part of these social groups, who are nonetheless very concerned by the environmental

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[12] ESS: *Economie Sociale et Solidaire*, French equivalent of SSE: Social and Solidarity Economy

consequences and food insecurity. Herself of Moroccan immigrant origin and living in a working-class neighborhood, she criticizes French environmental movements, often predominantly white and affluent, for targeting the QPV[13] and its working-class residents, often of immigrant origin, to win them over to their causes. However, they do not give them power of action or decision-making. The whiteness of these movements can also be seen in the fact that they do not really integrate the struggles of working-class neighborhoods beyond the issue of precariousness.

A question of power relations? Is a "class alliance" possible?

However, it's not just a question of analyzing these different players through an intersectional prism of class, gender and race..., but also of analyzing their power relationships. Who is really involved in 'food democracy' projects? Who has full decision-making power over their food system and its transition? What I've been able to observe, in the division of labor within these initiatives, is that it's often those who accumulate the most privilege, white people with high cultural capital, who reflect on, set up and inform themselves (often with a salary, and dedicated work time) about food justice projects. In particular, they are the ones who respond to calls for projects, also proposed and evaluated by the same individuals belonging to these social groups in foundations, local and national authorities . Although 'food democracy' initiatives place a great deal of emphasis on the aspect of people's participation, and thus increasingly want to blur the distinction between beneficiaries and volunteers/employees. This is the case, for example, with l'Etable, an association originally based on a very traditional food aid principle, with volunteers distributing food goods free of charge to beneficiaries in needy situations in a working-class neighborhood. However, as my interviewee explains, over the last ten years or so, and following a process of internal questioning within the association but common to other similar associations, the model has evolved somewhat to break down this separation between beneficiaries and volunteers, and involve them within the association. In other words, both beneficiaries and volunteers now have the same status: they are all members, and beneficiaries can participate at a free price, as well as taking part in volunteer tasks (distribution, transport, gleaning...). Although the roles are thus administratively undifferentiated, the reality remains that beneficiaries are difficult to mobilize to participate in decision-making bodies within the collective.

What's more, the associative world reality, which now relies heavily on funding from calls for projects and less and less on structural funding, makes this division all the more insurmountable. It is very rarely the beneficiaries or residents of working-class neighborhoods who write the applications in response to calls for projects. In reality, writing a response to a call for projects requires knowledge of certain codes, norms and values, which are often those shared within a white class, upper management or militant background.

The format of the calls for projects is therefore a limiting factor for real food democracy, as it requires the project to be thought through before being implemented with funding, and to be continually innovative rather than improving or perpetuating existing measures with structural funding. Projects generally obtain funding for 1 or 2 years, which, according to interviews with associative workers in local initiatives, is not enough to integrate into the neighborhood and set up a real 'food democracy' with ambitious and not just theoretical participation (Carel, 2017). Once the projects have been financed, participation and ownership of the projects by local residents remains difficult, since the employees carry out several missions in parallel and therefore have a limited number of hours to devote to the project. They also do not have the same temporality of the target public (are more available at weekends or in the evening,

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[13] QPV: *Quartier Prioritaire de le Ville* (City Priority District)

are less available during the month of Ramadan, sometimes speak poor French). These differences seem to make it difficult for some people to appropriate and invest in food democracy projects, which are also highly conceptual and therefore less accessible and attractive to the working classes (Comby, Malier, 2021).

If we are to move in the direction of a genuine 'food democracy', we mustn't forget the structural stakes that still exist within associations and collectives, and which *de facto* determine who has the power and codes for decision-making and the food transition, and who seems to be merely the recipient for it. Is "a class alliance" possible, as one of my interviewees once put it? The question remains open.

As we have seen, the concept of food democracy, though vague in its outline, has taken off in the worlds of research, civil society and public authorities. Nevertheless, taking a look at the English-language literature on intersectionality and food justice, we can see that the current structure of the associative world, with its calls for projects in particular, reproduces a situation where it is people with socio-economic and symbolic capital who retain decision-making power over food transition initiatives, applied to a population designated as in need of these changes. Far from being able to explain the reasons for the difficult mobilization of the working classes and minorities in the 'food democracy' movement, adopting an intersectional analysis in terms of power relations nevertheless seems to be a major hypothesis to be explored in my future thesis work.

Bibliography

Bereni, L. (2012) 'Penser la transversalité des mobilisations féministes: l'espace de la cause des femmes', in. Presses universitaires de Rennes, p. 27. Available at: https://shs.hal.science/halshs-01349832 (Accessed: 31 May 2024).

Bilge, S., Collins, P.H. and Maistre, J. (2023) *Intersectionnalité: Une introduction*. 1er édition. Paris: Editions Amsterdam/Multitudes.

Carrel, M. (2017) 'Injonction participative ou empowerment? Les enjeux de la participation en France', *Les Politiques Sociales*, n° 3-4, pp. 79–89. Available at: https://doi.org/10.3917/lps.173.0079.

Chiffoleau, Y. *et al*. (2022) 'La construction sociale de la démocratie alimentaire: quels enjeux pour la recherche?', in. Presses universitaires du Septentrion, p. 322 p. Available at: https://doi.org/10.4000/books.septentrion.128637.

Comby, J.-B. and Malier, H. (2021) 'Les classes populaires et l'enjeu écologique. Un rapport réaliste travaillé par des dynamiques statutaires diverses', *Sociétés contemporaines*, 124(4), pp. 37–66. Available at: https://doi.org/10.3917/soco.124.0037.

Guthman, J. (2008a) 'Bringing Good Food to Others: Investigating the Subjects of Alternative Food Practice', *Cultural Geographies - CULT GEOGR*, 15, pp. 431–447. Available at: https://doi.org/10.1177/1474474008094315.

Guthman, J. (2008b) '"If They Only Knew": Color Blindness and Universalism in California Alternative Food Institutions', *Professional Geographer - PROF GEOGR*, 60, pp. 387–397. Available at: https://doi.org/10.1080/00330120802013679.

Hancock, A.-M. (2007) 'Intersectionality as a Normative and Empirical Paradigm', *Politics & Gender*, 3, pp. 248–254. Available at: https://doi.org/10.1017/S1743923X07000062.

Hooks, B., Gay, A. and Potot, O. (2021) *Ne suis-je pas une femme?: Femmes noires et féminisme*. Paris: EVERGREEN.

Hourcade, R. and McClintock, N. (2023) 'L'alimentation, un enjeu de justice sociale: Mouvements alimentaires, politiques publiques et inégalités', *Lien social et Politiques*, (90), pp. 5–34. Available at: https://doi.org/10.7202/1105087ar.

Howerton, G. and Trauger, A. (2017) '"Oh honey, don't you know?" The Social Construction of Food Access in a Food Desert', *ACME: An International Journal for Critical Geographies*, 16(4), pp. 740–760. Available at: https://doi.org/10.14288/acme.v16i4.1524.

Lamine, C. (2008) *Les AMAP, un nouveau pacte entre producteurs et consommateurs?*

Montrieux, G. (2016) 'Organiser les proximités alimentaires: entre division du travail militant et encadrement normatif', in. Educagri, p. 267. Available at: https://shs.hal.science/halshs-03367537 (Accessed: 31 May 2024).

Ouassak, F. (2020) *La puissance des mères: Pour un nouveau sujet révolutionnaire*. Paris: La Découverte.

Ouassak, F. (2023) *Pour une écologie pirate: Et nous serons libres*. Paris: La Découverte.

Paranthoën, J.-B. (2013) 'Processus de distinction d'une petite-bourgeoisie rurale Le cas d'une «association pour le maintien de l'agriculture paysanne» (AMAP)'.

Paturel, D. and Ndiaye, P. (2020) 'Introduction. Démocratie alimentaire, le trouble-tête de l'alimentation durable', in *Le droit à l'alimentation durable en démocratie*. Nîmes: Champ social (Acteurs sociaux), pp. 17–46. Available at: https://doi.org/10.3917/chaso.patur.2020.01.0017.

Ripoll, F. (2013) 'Forces et faiblesses des AMAP et dispositifs apparentés', in. Presses de Sciences Po, p. 161. Available at: https://shs.hal.science/halshs-01665794 (Accessed: 31 May 2024).

Narratives of Change: more than individual intentions in the path to a sustainable and socially just food future

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Narratives of Change: more than individual intentions in the path to a sustainable and socially just food future

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This paper presents a cross-case qualitative analysis of the relationship between food security, sustainability, and social justice within the framework of the European Green Deal's Farm to Fork strategy. Drawing on fifty narratives in urban and peri-urban areas of five European countries (Austria, Greece, Portugal, Sweden, Turkey), developed in the project ACCTING (AdvanCing behavioural Change Through an INclusive Green deal), the study explores links between barriers and opportunities faced by individuals to access healthy and environmentally sustainable food and different forms of economic and social marginalisation framed by a socio-ecologic behavioural change perspective.

A narrative methodology allows us to delve into the food system realities of individuals and their families from low-income backgrounds, single mothers/parents, working parents with intersectional identities (e.g., LGBTQ, ethnic or religious minorities, migrant communities), disabled, and elderly people. The cross-case findings reveal an interconnectedness of scales (i.e. multilevel relations) between individuals and communities with local, national, and global policies and movements in developing small food transitions into larger changes, suggesting that food must be understood by policies and authorities from a multiscale perspective (both across time and space).

In fact, across combinations of demographic, socio-economic, and cultural backgrounds, many people seem to be aware of global sustainable food movements and have intentions to change their food practices. Yet, a set of structural, social, and political conditions exacerbate social and economic injustices, which impede them from making the leap from intentions to food access and change. However, the analysis also unveils factors that the interpersonal scale seems essential for change, transforming individuals into its agents. Social support networks like neighbours, friends, and family, emerge as key enablers of changing mindsets and behaviour, by fostering trust and transmitting diverse kinds of knowledge. They seem to provide access to the needed resources (food sharing and knowledge transfer) for changes, which policies and policymakers sometimes fail to provide. The challenge is to tie individuals, communities, and self-organised actions to feasible local, regional, and national policies.

By unravelling the diverse stories of struggle and transformation, our study illustrates how environmentally sustainable and healthy eating is not just a personal choice, but a collective journey, which calls for a multiscale perspective of participation, agency, and governance as analytical tool.

Keywords: Sustainable food systems, Food Justice, Vulnerable populations, Socio-ecologic framework, Behavioural change

Introduction

The concept of a sustainable food system (SFS) has gained significant importance over the last fifteen years, particularly among academia and policymakers (e.g. UNEP, 2016; HLPE, 2017; EAT-Lancet Report, 2019; FAO Strategic Framework, 2022; United Nations Sustainable Development Goals (SDGs) by 2030) (Brouwer, et al, 2020). According to Bene et al. (2019),

this increasing focus reflects the shortcomings of traditional food systems, which have negatively impacted various dimensions of food security and sustainability. They have shown unable to provide food available to all, to provide quality food, to give equitable access also in terms of culturally-appropriate food, and to preserve the environment (Bene et al. 2019).

Nonetheless, a look in the literature shows that some groups are more adversely affected than others. Individuals and communities in disadvantage that is, in vulnerable or marginalized positions — such as those experiencing poverty, racial, gender and ethnic discrimination, the elderly, and people living in deprived areas (e.g. food deserts)— encounter various obstacles that affect their right to accessing, consuming, producing, processing, and distributing nutritious food. Consequently, changes to SFS are more challenging for these individuals and communities than for others (Horst et al., 2024). This results in the creation of more socially unjust structures, where the most vulnerable are left behind (Bene et al., 2019).

Developing sustainable food systems capable of ensuring food security and nutrition for all is inherently complex. An SFS must be productive, deliver healthy and nutritious diets, be environmentally sustainable to address climate change, and be inclusive and just to support the most vulnerable populations (Viana et al., 2020). Therefore, people-centric frameworks like the sustainable food system wheel (FAO, 2018) or the socio-ecological model addressing behavioural change are increasingly incorporated in food approaches by placing individuals and their resources at the centre of interactions with society and nature; they sustain that human behaviour is complex, multidimensional and influenced not only by individuals inherent characteristics but also by the contexts in which they live from local to global levels. Thus, several layers influence the individual —from intrapersonal characteristics, such as attitudes and values, to interpersonal (micro to meso level), organisational/community (meso level) and policy levels (macro level). This multilevel perspective is explicit in space, including the local (e.g. neighbourhood), national or global level, and over time (i.e. adaptation to change). The socio-ecological perspective suggests that the performance of the food system is evaluated based on the ability of all actors within the system to influence each other, and to initiate change (Schölmerich & Kawachi, 2016; FAO, 2018).

With this framework in mind, our study explores experiences of individuals with varying intersections of vulnerability to better understand the key enablers and hinders that at different scales influence access to healthy, affordable, and sustainable food. The hypothesis is that the linkages between individuals, and their relations with natural and societal contexts, can trigger opportunities for altering behaviours and potentially initiate change in the community and society.

The study is implemented in the context of European Union's Horizon 2020 project ACCTING (AdvanCing behavioural Change Through an INclusive Green deal) and the research questions are: 1) What factors enable or hinder individuals to access and consume environmentally sustainable food? 2) Are these the same/different for various (vulnerable) groups and countries and at different levels?

Our empirical investigation to answer the questions is exploratory, building on 50 narrative interviews conducted with people living in urban and peri-urban areas in 5 countries (10 interviews per country): Austria (Vienna), Greece (Thessaloniki), Portugal (Lisbon and Cascais), Sweden (Orebro, Stockholm, Gothenburg) and Turkey (Gökçeada, Çanakkale, Izmir, Istanbul).

Methodology

The study follows a qualitative approach that uses narrative interviews, which were carried out in three phases:

(1) Desk research to identify target vulnerable groups and tentative enablers and hinders

The first step consisted in identifying the priority target groups through multidimensional vulnerability approaches: Identification of the priority target groups of ACCTING is based on the theoretical framework of social, economic, and environmental vulnerability, which is inherently multidimensional (Poortinga & Darnton 2016). In this project they are: Gender, Gender Identity, Age, Disability, National minority, Ethnicity, Religion/belief, Sexual orientation, Social class, Geography.

The second step was to identify tentative factors serving as hinders and enablers of behavioural change. Tentative factors were identified through a comprehensive literature review and summarised along three major categories (also adapted from the FAO's sustainable food system wheel and the socio-ecological model): resources, social dynamics and relations, and structural conditions. Personal resource conditions include both material (e.g., money, tools, software applications) and immaterial (e.g., time, data, experiences, know-how, access to political and social actors) resources. Social dynamics include different kinds and aspects of social relations (e.g., having people to rely on/trust, caring/emotional support, being part of a community or social network, and having certain beliefs and values) (e.g., Centola 2018). Structural conditions relate to the broader material and immaterial conditions 'owned' by a society (e.g., infrastructures, the physical and natural environment, policies, social and economic conditions, socio-cultural norms) (FAO, 2018).

(2) The narrative interview

The narrative interviewing is a qualitative method to articulate and share people's stories in their own words. Narrative analysis can be used to understand how experiences of past events and circumstances can improve collective planning and policy for the future (; Zorell et al., 2023). The technique is used to collect and share a person's story which entails both a research methodology and a mechanism for storytelling, i.e., both a way of telling a story and a way of knowing.Stories have both intuitive and emotional elements, which are important complements to statistics and more impersonal and generic accounts of inequalities. Narratives as a technique can thus make visible how multiple sources of inequalities intersect, as well as the situational and contextual nature of inequalities from a single person's perspective (Zorell et al, 2023)

The narrative started with a general background question: I would like to ask you how you usually obtain your food? Can you describe your daily food routine? Could you please share your experiences and concerns in this respect? This was followed by more concrete probing questions. An example for such a question is: Are there different opinions/views in the family about eating habits and environment-friendly and healthier eating?

(3) Analysis of the narratives

Following each interview, researchers completed a report on the informant and the narrative in a spreadsheet template provided for this purpose. Each narrative interview report contained three sections: background information (including vulnerability profile of the informant), narrative summary and analysis (including keywords and telling quotes to flag important themes and statements that captured the narrative), and identification of enabling and hindering factors (where the interviewer was asked to flag enabling and hindering factors across the three thematic dimensions: resources, social dynamics, and structural conditions). Some descriptive and test hypothesis were developed to analyse possible relationships between data.

Case study results

Country context and sample characterisation

The project collected narratives from 5 countries: Austria, Greece, Portugal, Sweeden, and Turkey. These five countries vary geographically, socio-demographically, and economically. Turkey stands out among the other countries as being the most populous (84.7 million in 2021), the most ethnically diverse and for hosting the largest number of refugees, namely Syrians. All others have similar demographic dimensions (around 10 million inhabitants in 2021). In Sweden and Austria, more than 20% of the resident population was born abroad or has an immigrant background, while in Greece and Portugal, foreign citizens account for 8.4% and 5.2% of the total population, respectively (Eurostat, 2022). In 2022, Sweden and Portugal had the lowest rate of population that was unable to afford a meal containing meat, fish or a vegetarian equivalent every second day, with 2.4% and 3%, followed by Austria (5%) and Greece (10%), the latter ranging above the EU average of 8.3% (Eurostat, 2022). According to the Turkish Statistical Institute, for Turkey, the rate was of 41.5%.

Regarding the narrative interviews, the sample comprises 50 narratives (n=50), including 33 women (66%) and 17 men (34%). Most of the informants (46%) are between 25-44 years old, whereas 32% are between 45-64 years of age. Greece presents the highest proportion of younger people (aged 25 or less years old), and women, while in Portugal 70% of the interviewees are aged between 45 and 64 (Table 1).

	Portugal	Sweden	Austria	Turkey	Greece	TOTAL
GENDER						
Woman	6 (60%)	7 (70%)	6 (60%)	6 (60%)	8 (80%)	33 (66%)
Man	4 (40%)	3 (30%)	4 (40%)	4 (40%)	2 (20%)	17 (34%)
AGE						
Unknown				1 (10%)		1 (02%)
< 25	0 (00%)	1 (10%)	1 (10%)	0 (00%)	3 (30%)	5 (10%)
25 – 44	2 (20%)	6 (60%)	4 (40%)	6 (60%)	5 (50%)	23 (46%)
45 – 64	7 (70%)	2 (20%)	3 (30%)	2 (20%)	2 (20%)	16 (32%)
≥ 65	1 (10%)	1 (10%)	2 (20%)	1 (10%)	0 (00%)	5 (10%)

Table 1 – Informants by sex, age and country of residence

The profiles of the interviewees include various kinds of backgrounds standing for social vulnerability and marginalisation. These factors were identified by the field researcher based on research desk, including participants covering all vulnerability factors previously identified. Although there are some differences in the most represented vulnerability profiles in the sample of each country, which can be a limitation of these qualitative approach, we can see in Table 2, social class and socio-economic background, followed by gender, geographical context – urban/rural – and ethnicity, as the most relevant characteristics defining the vulnerability positions of the individuals recruited for this study.

	Portugal	Sweden	Austria	Turkey	Greece	TOTAL
Vulnerability profiles						
Already marginalised /disadvantaged	5	4	4	7	0	20
Socially included but at risk	5	6	6	3	10	30
Vulnerability factors						
Gender	4	5	0	6	8	23

Gender Identity	0	2	1	0	0	3
Age	3	4	4	1		12
Disability	3	1	1	0	0	5
Membership of a national minority	2	1	0	4	0	7
Ethnicity	1	4	4	7	0	16
Religion/belief	1	1	1	0	0	3
Sexual orientation	0	1	0	0	5	6
Social class / socio-economic background	10	6	8	9	3	36
Geographical (e.g., urban/rural)	4	4	0	9	1	18
Other	3	2	5	1	4	15

Table 2 - Vulnerability factors of the informants.

In Portugal, Austria, and Turkey, social class/socio-economic background is the most represented vulnerability factor, while in Turkey the geographic context is also prominent ('rural and peri-urban areas'), followed by ethnicity and gender. In Sweden, social class/socio-economic background has the highest representation, closely followed by gender, age, ethnicity, and geography. Finally, in Greece, gender and sexual orientation are the most represented vulnerability factors in the sample recruited. Although not represented in the table, several interviewees from Portugal and Turkey were not only consumers; they were also gardeners and farmers.

Enablers and hinders of change

The enablers and hinders of change are analysed from the perspective of three thematic dimensions: resources, social dynamics, and structural conditions. We identified six resources which are normally intrapersonal (e.g. money, time, education, knowledge perceived self-efficacity, access to equipment) plus the access to political and social actors, which is related to the community layer. On the second dimension we identified four social dynamics related to the interpersonal layer (part of a community social relations, and feelings of social appreciation), and beliefs and values (the former being partially overlapping with the intrapersonal layer). Finally, the third dimension is the structural conditions (environment, infrastructure, policies and politics and events). This dimension stands in the junction of community and physical and social environment layer.

Overall, concerning resources we can observe that there is some general balance between enablers and hinders. However, knowledge, perceived self-efficacy, time and access to social and political actors stand out among the former, while money and access to equipment show more weight among the latter.. Structural conditions are considered to act more as barriers than enabling factors, while social dynamics are referred to by more participants as enabling rather than hindering(Figure 1).
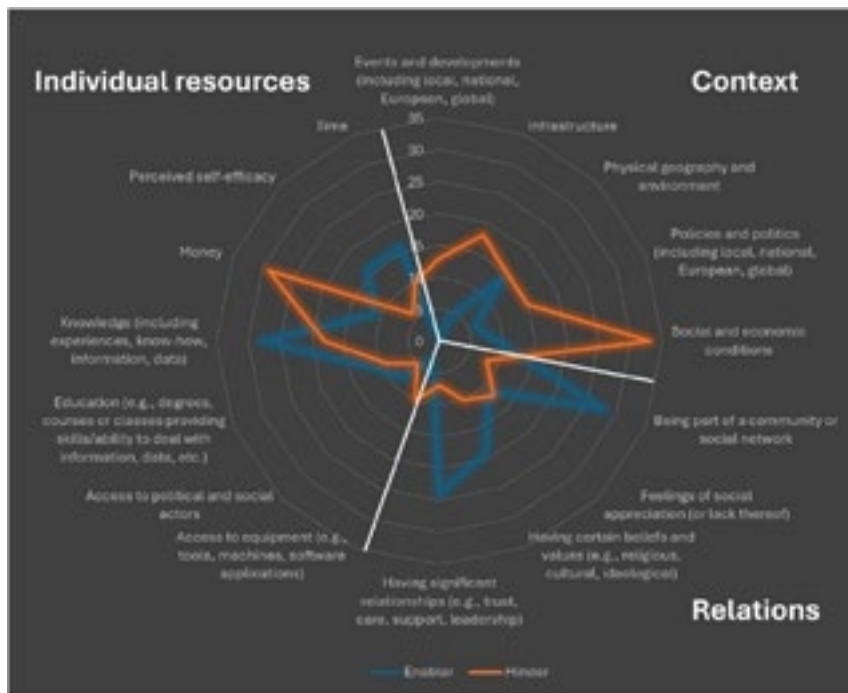
Figure 1 - Enablers and hinders of change, by category and subcategory

In general, the most common enabler of change regarding resources is knowledge (28 mentions), but lack of knowledge can also be considered as an obstacle (18 mentions), while money is raised as a prominent hindering factor (in 29 narratives). Concerning social dynamics, the most common enablers are being part of a community or social network (28 mentions) and having significant relationships (24 mentions), followed by having certain beliefs and values. Relations and the role within the community, as well as the indication of behaviours conducive to shifting towards sustainable eating habits due to beliefs and values (e.g. health conditions and beliefs) indicate that even in contexts of vulnerability and marginalisation, there is some awareness of what constitutes a healthy and sustainable diet The following quotes are illustrative of the effects of social dynamics to induce behavioural change:

> Our only income comes from selling flowers. When we could not sell flowers, we had no money and no food. It was very difficult. We managed to survive thanks to the support of neighbours, friends and family. We also received some food support from the municipality. (Turkey Romani Woman, aged 38)

> If you are in a good relationship with the field owners and prepare your food (...) in summer, you will be okay in winter, since we rest in winter. [And] For example, when you know the owner of the local grocery store in your neighbourhood in person, you buy and later pay with the money you will earn. (Turkey, Romani man, aged 42)

> I am very grateful to the Town Hall, which gave me this little house, and (...) this garden too, to help my life, and they are also helping me there at ARESC [Association for Educational and Social Responses to the Community] with a little basket from the Food Bank (...) And so, thanks to the garden, I relate more to the people who are here (...); we pretend that we are from the same family (...). (Portugal, Immigrant woman)

The feelings of social appreciation have, in turn, almost a balance of mentions as an obstacle (12 cases) and as an enabler (11 cases). Structural and contextual conditions are almost exclusively referred to as hinders. Social and economic conditions are a major hindering factor (33 mentions), followed by infrastructure (18 mentions and only 4 times mentioned as an enabler). Physical and natural environment work both as a hinder and an enabling factor (15 and 14 mentions, respectively). Policies and politics were considered as a hindering factor by 15 informants, not very different from events and developments 13, this one with no mention as an enabler.

Results by country highlight that most individuals revealed a combination of facilitating and inhibiting factors of change of individual character (micro-level factors), especially in Greece and Portugal, and then follows the combination of individual enabling conditions with hindering structural conditions of change, with cases from Austria and Greece standing out here.
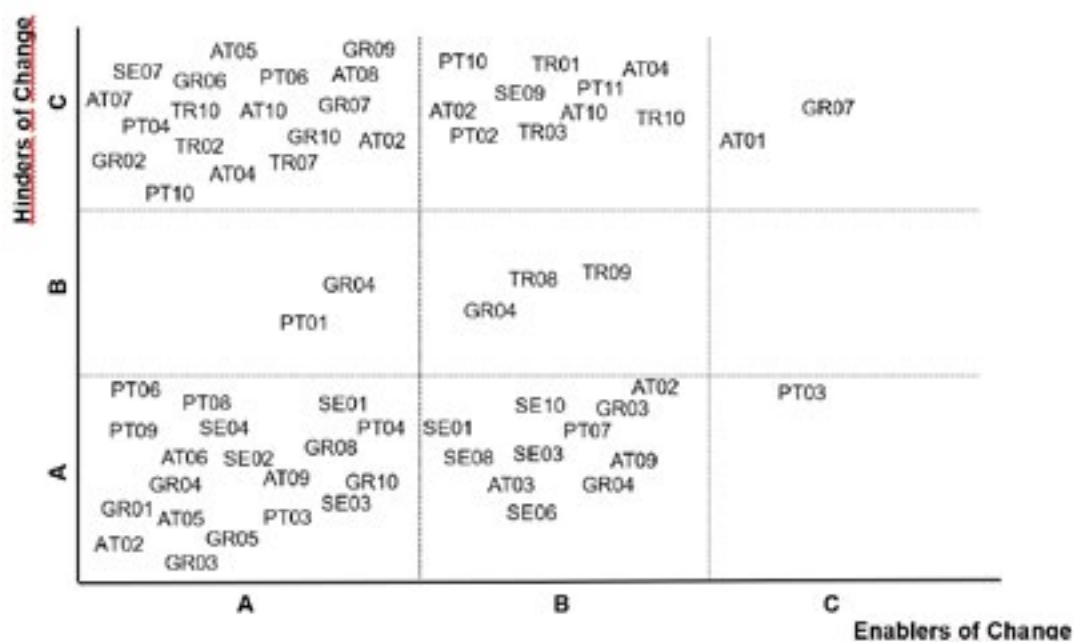
A – Individual Resources (micro-level factors);
B – Social Dynamics (meso-level factors);
C – Structural Conditions (macro-level factors)

Sources of the Narratives
AT – Austria; GR – Greece; PT – Portugal;
SE – Sweden; TR – Turkey

Figure 2 – Significant relationships between enablers and hinders of change

Finally it was possible to test the relation between hinders, enablers and the vulnerability profiles through the Chi-Square Test P-Values to check if there were statistically significant associations. The p-value less than 0.05 was only found for the relations between Enabler Structural and Vulnerability profile: Disability (p = 0.014) and Enabler social dynamics and Vulnerability profile: Social class (p = 0.031). This suggests that enablers and hinderers are transversal and intersect all the profiles.

The socio-ecological model emphasises that food decisions are developed based on a combination of intra- and interindividual factors. Figure 3 enables to visualize how obstacles and enablers at different scales relate with the socio-ecological model.

a. money, b. time, c. education, d. knowledge, e. perceived self-efficacity, f. access to equipment, g. access to political and social actors, h. part of a community, i. relationships, j. feelings of social appreciation, k. beliefs and values, l. environment, m. Infrastructure, n. policies and politics, o. Events, p. Socio-economic conditions
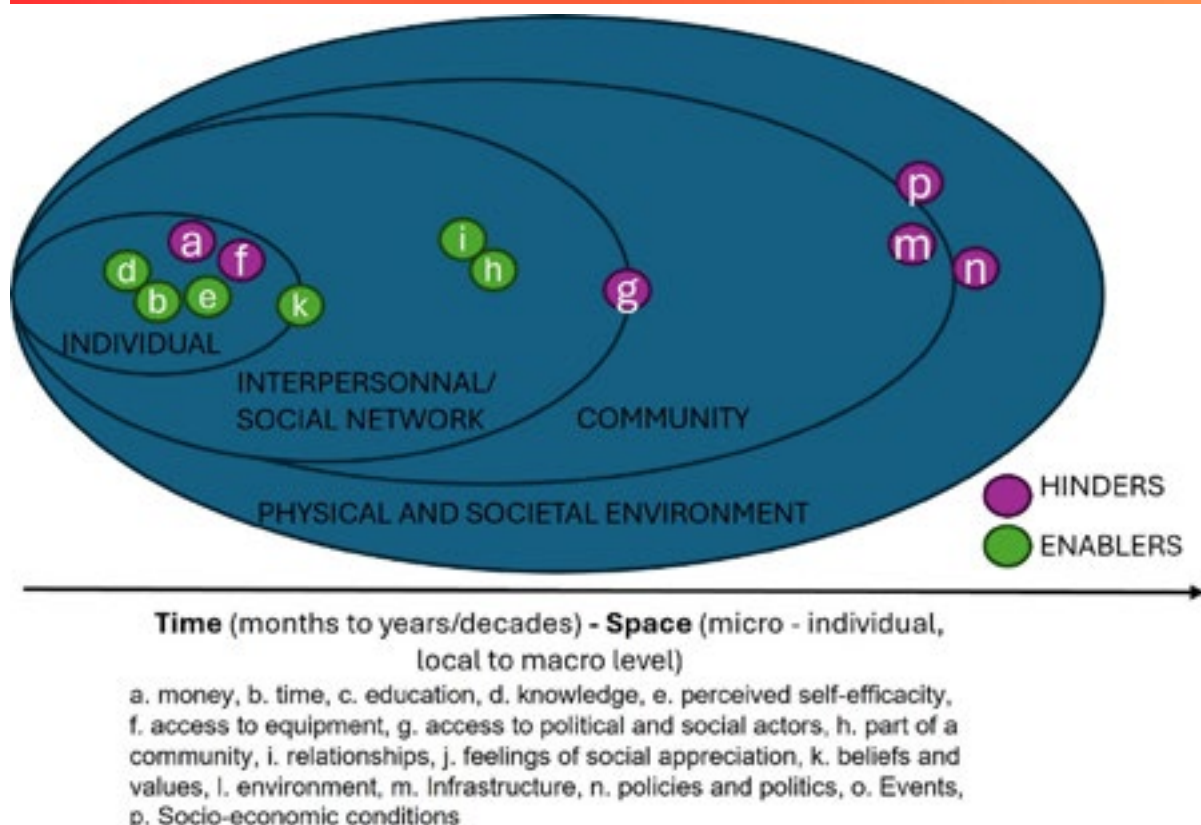
Figure 3 – Barriers and enablers categorized within the socio-ecological model. Source: the authors, adapted from FAO (2018); Schölmerich and Kawachi (2016), Peng, et al (2018), Kincaid, et al. (2007).

We find that most enablers are closely related to interpersonal levels (overall and by country – cf Figure 2). This indicates that despite personal barriers such as financial constraints, behavioural change can be facilitated through knowledge and immersion into a social environment which helps and encourages eating healthy and environmentally food.

Thus, the interpersonal level, or local scale, tends to act more as enabler than as obstacle. However, at the meso- to macro scales, structural conditions play a significant role as obstacles to change. There is a substantial gap between what individual strive for and what the macro scales enable them to put in practice: shops and other access points to food that is both healthy and environmentally friendly is missing, coming paired with lack of access to transportation that could bring individuals to the shops while also being affordable to them. The meso- and macro scales are the scales of policy implementation, and the ones facing challenges in counting that no one is left behind.

Final remarks

In our study, we found that most enablers of change are closely linked to personal and interpersonal relations. While some change originates from individual knowledge, it is primarily the interaction within social networks that drives change, even in the face of financial constraints. These social interactions facilitate access to resources such as food sharing and knowledge transfer—areas where policies and policymakers, operating at more macro levels, often fall short. Consequently, structural factors at the meso to macro scale (regional and national) can constrain the ability of the most vulnerable populations to effect change.

Our findings suggest that while social capital—encompassing relationships around the local food system, community engagement, and collective action—and human capital—individual preferences and knowledge influencing food system choices—are vital for accessing healthy and nutritious food, these alone are insufficient to drive widespread change. Effective community education and a broader dissemination of knowledge in disadvantage communities through sound policies would be determinant of behavioural change.

Furthermore, aligning policies at local, regional, and national levels to support sustainable food systems and address structural barriers is crucial. Sustainable eating is not solely an individual effort; it requires cohesive integration across local, national, and global levels. Policies, actions, and governance schemes at these various scales must be coherent and mutually reinforcing (Leeuwis, 2021). For instance, public health policies should account for territorial aspects of food systems, and agriculture should be integrated into land use planning and management. These are examples where public participation and governance are possible and necessary.

In summary, fostering social and human capital is critical, but it must be supported by comprehensive policy frameworks. These frameworks should aim to eliminate structural barriers and promote sustainable food systems, ensuring that efforts at the individual and community levels are bolstered by robust and supportive governance. By integrating social capital, human capital, and well-aligned policies, we can create a more equitable and sustainable food system for all.

Bibliography

Béné, C., Oosterveer, P., Lamotte, L., Brouwer, I. D., de Haan, S., Prager, S. D., et al. (2019) 'When food systems meet sustainability–Current narratives and implications for actions', World Development, 113, pp. 116-130.

Brouwer, I. D., McDermott, J. and Ruben, R. (2020) 'Food systems everywhere: Improving relevance in practice', Global Food Security, 26, 100398.

Centola, D. (2018) 'The truth about behavioral change', MIT Sloan Management Review. Available at: https://ndg.asc.upenn.edu/wp-content/uploads/2018/11/The-Truth-About-Behavioral-Change.pdf (Accessed: 31 May 2024).

EEA (2023) Briefing no. 26/2023 Delivering justice in sustainability transitions. Available at: https://www.eea.europa.eu/publications/delivering-justice-in-sustainability-transitions (Accessed: 31 May 2024).

Horst, M., McClintock, N. and Hoey, L. (2024) 'The intersection of planning, urban agriculture, and food justice: A review of the literature', in Planning for Equitable Urban Agriculture in the United States, pp. 89-120.

Kincaid, D. L., Figueroa, M. E. et al. (2007) A social ecology model of communication, behavior change, and behavior maintenance [working paper]. Baltimore, MD: Johns Hopkins Center for Communication Programs, Johns Hopkins University.

Leeuwis, C., Boogaard, B. K. and Atta-Krah, K. (2021) 'How food systems change (or not): Governance implications for system transformation processes', Food Security, 13(4), pp. 761-780.

Peng, W., Dernini, S. and Berry, E. M. (2018) 'Coping with food insecurity using the sociotype ecological framework', Frontiers in Nutrition, 5, 107.

Schölmerich, V. L. and Kawachi, I. (2016) 'Translating the socio-ecological perspective into multilevel interventions: Gaps between theory and practice', Health Education & Behavior, 43(1), pp. 17-20.

Strid, S., Balkmar, D., Zorell, C., White, J. and Boström, M. (eds.) (2024) Narratives on inequalities in enablers and hindrances for advancing behavioural change through an inclusive Green Deal in Europe. ACCTING dataset. Zenodo. DOI: 10.5281/zenodo.10522048.

Viana, C. M., Freire, D., Abrantes, P., Rocha, J. and Pereira, P. (2022) 'Agricultural land systems importance for supporting food security and sustainable development goals: A systematic review', Science of the Total Environment, 806, 150718.

Visser, J. and Wangu, J. (2021) 'Women's dual centrality in food security solutions: The need for a stronger gender lens in food systems' transformation', Current Research in Environmental Sustainability, 3, 100094.

Zorell, C. and Strid, S. (eds.) (2023) D3.2 ACCTING Report on first cycle experimental studies. Confidential report delivered to the European Commission 28 April 2023.

PAPER SESSION 2.A
CITY REGION
FOOD
SYSTEMS

Global city goes local: State ambitions and societal undercurrents of food localization in Singapore

— SOH Emily

Global city goes local: State ambitions and societal undercurrents of food localization in Singapore

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Singapore – perhaps the quintessential city-state reliant on the global food trade is now taking a second look at its previously unquestioned policy of sustaining its food supply almost entirely on food imports. With its shift in policy, the state emphatically signals a new ambitious goal of locally supplying 30% of its nutritional needs by 2030 under its "30 by 30" strategy. It is ambitious given that current local food production accounts for less than 10% of its food supply and agriculture takes up just 1% of its land of the almost entirely urban island city. The developmental state and technocentric approaches often practised in Singapore are being applied in this unfamiliar terrain, as the state offers broad strategic direction and policies, and subsidises private sector participation typically for technological experimentation and development. This main (and outsized) top-down narrative may belie the undercurrents of societal practices of food localization, explored here through interviews with researchers and practitioners in ground-up food-related initiatives. For the conceptual framework, we modified Lefebvre's social production of space theory and paired it with a modified multi-level perspective concept (Geels) from transitions theory. Applying the framework to examine Singapore's food localization, we explicate the confluence of social relations, discourse and physical space in food localization as active and productive elements in building up urban food commons as part of the country's less-told food system transition processes.

Keywords: food localization, food system transitions, relations-discourse-space triad, urban food initiatives, urban food commons, food rescue

Introduction: Backdrop and historical context of Singapore's food system

Singapore is an island city-state with limited land, labour and natural resources. It has an open and trade-dependent economy. While its domestic economy is relatively small, it is highly connected to international trade through its air and sea ports. While having built wealth and stability that makes it an outlier of other small island states for which Bishop (2012) asserts vulnerability as their defining characteristic, Singapore also employs narratives of vulnerability as a taker of world events and the need for a perpetual project of building resilience. Against this backdrop, Singapore's food system has been shaped by characteristics of land and labour constraints that do not favour domestic agricultural production and a deep integration with global and regional trade that supports an import-oriented strategy for food supply. Government food policies rested on establishing a stable supply of a wide variety of food types from diverse sources on the international market from some 170 countries and regions (SFA, 2021), and regulating and enforcing quality and safety food standards on imports.

The city-state's policy of import orientation and deep integration with global food trade has been perceived as a major success as Singapore ranked the most food-secure country in 2019 (GFSI, 2019). However, its food security outlook has shifted since entering the post-Covid world of supply chain disruptions, global geo-political instability and increasing instances of extreme climate events in the world, and the protectionist stances on food export by producing countries (Erokhin et al 2021), including by Singapore's closest neighbour and her largest supplier of fresh produce (EIU, 03.06.2022). Its food security ranking in 2022 (GFSI, 2022) has tumbled to 28th place (out of 113 countries), due largely to risk factors resulting in poor scores in the "Sustainability and Adaption" category (in 92nd place). This highlights its challenges in tackling domestic environmental factors impacting food security.

With this comes the conundrum of how Singapore can now begin to strengthen its domestic food production after decades of deliberate policy and economic restructuring which has pivoted away from domestic agriculture (Tortajada and Zhang, 2016). In 2019, Singapore announced its "30 by 30" strategy, to increase its domestic food production from its current

10% to 30% by the year 2030. This is an ambitious goal, given how much local production has to be boosted from current levels, while its basic parameters of land constraints, high labour costs and high investment costs for high-tech agriculture have not changed.

With food security framed both as a national security issue and an area of strategic industry development, the developmental state (Liow, 2012) adopts a familiar playbook/ replicates oft-tested strategies to spearhead the growth of Singapore's domestic food production. This includes promoting the banner of the "30-by-30" domestic production goal, land use investments and re-allocation, and financial incentives such as subsidies through the Agriculture Productivity Fund to encourage private sector capital and technological investments in agricultural production (Montesclaros et al 2018). (Albeit in this case, there is less of a presence of multinational companies, given the nature of domestic fresh food production). These are supported by substantial messaging to the public and industry for the need for land economizing, high-tech modes of production to reap the benefits of sustainable production. Technological and sustainability narratives often raised for promoting local food production include shorter and more reliable supply chains, and resource-efficient production of crops, especially land (with exhortations to pursue technologies and techniques that can reduce water, energy, and emissions). Concepts of the circular economy have also been applied in treating food waste to recover nutrients or energy at Waste-to-Energy plants (SEC, 2019) or circular agriculture systems such as aquaponics. Despite a push for technological innovation, the industry development rationale arguably sits within a fairly conventional pathway of growing a business or industry sector under the developmental state paradigm.

Under this new policy trajectory (if not sufficiently a policy u-turn), new developments have been set in motion. The policy has the intended effect of triggering interest in the commercial front, boosted by subsidies in high-tech agriculture and food businesses and start-ups, even as the economic viability of many of these businesses has consistently been challenged in these initial years (The Straits Times, 27.05.2024). The high-tech turn in Singapore's agriculture has also triggered changes in land use plans, whereby much of the land that has been zoned for agriculture in the 2014 Master Plan in Lim Chu Kang – the core area of agriculture land in Singapore – has been rezoned as open space, and the remaining agriculture land there correspond largely to the three agrotechnology parks defined by the Singapore Food Agency (SFA website). This accelerates the phasing out of conventional land-based farms and replacing them with agrotechnology parks which are multi-storey complexes for high-tech, intensive agriculture, which is set to comprise the bulk of local food production in Singapore (Montesclaros et al 2018). Diehl et al (2020) noted that land zoned as agriculture has dropped from 979 hectares (1.25% of total land use) in the 2014 Master Plan to 609 hectares (0.78%) in the 2019 Master Plan.

Singapore is losing its legacy farms and their social eco-system, farmers' knowledge that is in some instances built over several generations, and a vital source of Singapore's history, cultural and environmental farming heritage. Notably, the loss of these farms has also brought about the loss of diversity in agriculture production and local seed and crop varieties that could have strengthened Singapore's domestic food production and long-term security. Klerkx and Rose (2020:3) in examining the implications of the pursuit of high-tech Agriculture 4.0 emphasized the value of "diversity, co-existence of different agriculture and food system [whereby] when there is no space for diversity and some systems become dominant and hegemonic, this may generate inequalities and injustices which are non-desirable from a human welfare point of view, an animal ethics viewpoint, or an ecosystem integrity and sustainability standpoint".

While such a space for diversity appears to be narrowing in the dominant narratives and for commercial agriculture, there is a societal undercurrent of agriculture and food-related ground-up initiatives gaining momentum in Singapore. These initiatives span from urban farming to food waste, from nutrition to food welfare, generating a diversity of discourses and building up civil society revolving around food issues. The rest of the paper builds a conceptual framework

from which to discuss the findings from the interviews with food researchers and practitioners to present a broadening discourse less heard in Singapore.

Methodology

This paper examines food localisation, particularly ground-up efforts on food production and food waste, as a part of a larger project looking at Singapore's food system transitions. We sought potential interviewees through grey literature including news websites and contacts of other academics. Through snowballing (citation) we received recommendations from other potential interviewees. We carry out face-to-face interviews with those leading or playing significant roles in their ground-up initiatives. Some of these interviewees have reached a degree of recognition for their work in the social arena and contribute actively to social discourse, civil society networks, and even the shaping of physical spaces. Where possible, we also visited urban farms, gardens, food rescue sessions and other social activity centres in combination with the interviews to gain a deeper understanding of the operations, spaces and social dynamics of the various initiatives. Interviews are audio-recorded with permission, transcribed and coded using textual analysis software. We analysed the transcripts using thematic analysis to identify the characteristics of ground-up efforts, particularly their motivations, network formations, how they build projects and spaces, and their role in carving out diverse pathways to food system transitions.

Conceptual framework

To theorize the formation of societal interest group networks (a subset of civil society) and their role in contributing to reimagining possibilities in food system transitions, we built a conceptual framework with concepts from the sociology of space and transitions theory.

From the sociology of space, Lefebvre's (1991) social production of space asserts that space is no mere context but comprises active social processes and malleable outcomes; space interacts with people to constantly (re)produce social relations and places that form society. Lefebvre delineated the three elements in the production of space. This consists of "spatial practice" pertaining to how physical spaces are organized and used in daily life, "representational space" relating to individuals' subjective experience of spaces, and "representations of space" concerning spaces conceived by professionals such as urban planners and being represented on maps (Lefebrve 1991). Our conceptual framework builds on Lefebrve's idea that people and spaces interact to actively produce society, but we translate his heavily space-centric 'triad of space' in preference of a triad that gives a balance to three dimensions: social relations, social discourse, and physical spaces.

It is not a trivial modification of the concept as it acknowledges that tangible and occupiable space is not an available constant, and in its absence, social relations and discourse (are no mere abstract spaces but) take on distinct and substantive roles in supporting social creation. In other words, it is sometimes in lieu of space or disappearance of space, and in contrast to ephemeral and ad-hoc spaces temporally held, that social production continues and persists in social relations and social discourse. The triad of social relations, discourse and physical spaces can hold commensurate roles, without privileging one over another; all three work together and continually create and sustain one another. (Civil) society is produced by, and in mutual fashion reproduces, social relations, discourse and space.

Social relations in societal groups relate to the foster of community, banding around broadly shared interests, and practical building of inclusivity and collaborations. Beyond connecting on the basis of similarities, social relations encompass the encounter of differences – in backgrounds, ideologies, and preferences – and engaging in diversity, listening to different points of view and exercising respect.

Social discourse (and social epistemology) relates to how groups build knowledge and generate ideas that can go towards enriching the spectrum of narratives and the quality of societal discussions. Societal groups can engage in constructing new discourses, interrogating existing ones, and broadening and deepening the scope of social discourses. The concept of discourse and epistemology goes beyond the abstract Lefebvrian notion of discursive space, but the contextual and substantive working out of societal concerns, disagreements, and plural conceptions of what constitutes the common good. Such a process of deliberative discourse incorporates a range of alternative possibilities and pathways, strengthens problem-framing and testing of solutions, and potentially leads to epistemically better outcomes (Landemore and Page (2015). As food system transitions are often "undergirded by normative directionality and attentive to goal-oriented outcomes" (under review), enhancing social discourse and epistemology serve to identify and include socially important normative goals that can get sidestepped by economic or security priorities.

Physical spaces play an important role in coalescing social relations and social discourse. In Lefebvre's social-spatial dialectics, space makes manifest and builds upon existing social relations and discourse, and in turn is shaped by social relations and discourse that infuses it with meaning and substance. Thus arguably, without social relations and discourse, space remains bereft of social meaning. We posit that space's role as a shaper of society is activated first by social relations and discourse. Furthermore, in the loss of space or the temporality of space, it is social relations and discourse that continue to produce civil society, albeit without concrete manifestation. (This is demonstrated in the empirical section.) Pertaining to "spaces" on digital platforms, we regard these as abstract, pseudo spaces which are one of other possible conduits for the transmission of discourse and maintenance of social relations, and are not true comparables or substitutes for physical spaces.

We make a case that the creation and maturation of a ground-up initiative with an extensive network, recognition and social capital requires all the above three elements. How then can ground-up initiatives contribute towards building pathways for food system transitions? We attempt to answer this through a second step in building the conceptual framework which makes reference to transitions theory. In particular, we refer to Geels' (2002, 2019) multi-level perspective (MLP) and adopt some of its terminology. The MLP describes systems transition as a process whereby the dominant system, called the "regime" consisting of its institutions, policies, economic structure, and social practices begins its transition when one of many "niches", which may be a new technology or innovative system or practices, succeeds in breaking through the regime to initiate system change (Geels 2002, 2019). An example of this is the automobile (with its entire ecosystem of infrastructure, markets, and social practices) starting as a niche but generating a transition in transport replacing horsecarts and establishing itself as the new regime. A public value, social practice-driven transition (instead of a technology-driven one) is perhaps the success of some walkable or car-lite cities in face of the now dominant automobile regime, although such successes are few and far between.

In this study, we frame the import-dependent food system as the regime, and various approaches to change or at least modify the regime as the niches. At the policy outset, it appeared that the transformation of food production as a high-tech industry was going to the niche to be nurtured to co-exist as a new regime. This study however will shed light on other niches in food localization efforts. Figure 2 is a modification of Geels' (2002, 2019) MLP concept diagram. In Figure 2, ground-up initiatives form the various niches, each with their social relations, discourses and spaces, to find their breakthroughs into the current regime. The niches may not necessarily need to replace the regime to succeed. They carve a space of their own and thrive alongside the regime. The discourses, social relations and spaces of the niches become more widely recognised and accepted by the public as the regime accommodates and even supports the coexistence of the niches.

Findings and discussions

The section analyses two ground-up initiatives – a food sustainability collective and a food rescue network – whose leaders we interviewed may be considered veterans in their respective fields. We explicate how social relations, discourse and space interplay in building up their initiatives and create possibilities for charting pathways for diverse food futures.

A food sustainability collective

We interviewed one of the founders of a food collective that has been in existence for a decade, and has seen its goals, focus areas, networks and influence evolve through the years. The collective is volunteer-run, with members straddling across broad interest areas in food and its relations to the environment and society. It comprises a loose amalgamation of interests of their members such as fair and inclusive food systems, ecosystem health, food insecurity, ecological food production, and community food gardens. From the interview, we fit together a story of the maturation of this civil society group as a meandering journey in identifying shared goals that eventually coalesce into projects from a multiplicity of aspirations and motivations that its diverse members bring.

Social relations:

Upon inception, the collective had a porous and inclusive outlook whereby anyone interested in food sustainability could join and contribute ideas. As such the collective is made up of people of diverse backgrounds, interests and motivations. It served as a focal point for people to gather and explore ideas, go on outings such as farmers' markets, and simply to gather and build a sense of community revolving around sustainable food systems. The network building process was organic, taking on much trial-and-error to sort through the heterogeneous motivations, voices and disagreements, and many years to find directions and transform ideas into action.

Social relations were built around aspirations, shared interests and friendships, and knowledge sharing and building (see Discourse section) are tied up with such relationships. The interviewee shared that some of those who joined the collective started simply with an interest in food sustainability and were keen to exchange ideas. Through the collective, they have met like-minded people yet with diverse perspectives on the food system such that their "sense of community has expanded all the way across Singapore". Contrasting a typical industry or business start-up network where people can quickly become competitors, she explained that "in this network, the 'competitors' [those with their sustainability ventures and interest groups] are really friends. Behind the scenes, we continue to support one another and share knowledge. The gathering and sharing of knowledge is now more often based on individual-to-individual connections."

Alluding to relationship- or network-spawn spaces (see Spaces section), here is a process by which relationships formed in the collective and its wider networks have led individuals to spontaneously organise meet-ups and their own smaller groups and venues. "In the past, the collective would organize garden visits and invite attendees. But now people make their own events, in their own gardens, and get together as good friends. People's relationships have really grown especially as they cook together, eat together, do different things together". It was the deepening of social relations that led to informal, private spaces being opened up and shared; together, they produced further deepening of social capital over time.

The network builds relationships with partners and audiences that include the wider public. It has ongoing conversations with policymakers who appreciate them as a source of ground-up knowledge. To strengthen network building beyond conversations, the collective has begun to organize educational workshops on topics such as permaculture, native food crops and composting, and projects to establish edible gardens. With its audience, it adopts an engagement approach driven by shared interest and social learning, "it's really about championing and raising, bringing that experience of compositing into neighbourhoods –

selected neighbourhoods – because we didn't want to just work with any neighbourhood. I think the challenge sometimes with government involvement is that I have people saying, 'Oh, my MP (Member of Parliament) is interested, can you pitch us? But I'd tell them, 'But you are not interested.' I want to work with people who are genuinely interested, maybe they have tried and have failed, then we go in."

Discourse (and epistemology)

The collective produces social discourse and epistemology through sharing and building knowledge and testing out new ideas such as through alternative approaches to growing food that supports ecological health and strengthening social engagement through community involvement. The collective members' aggregated knowledge of permaculture, syntropy, agroforestry, climate resilient plants, indigenous plants and seeds, and seed species diversity offers alternative perspectives towards food security by strengthening long-term food system resilience. This stands in contrast to the dominant tech-oriented and productivist approach of policymakers and the majority of food enterprises and start-ups in Singapore.

The activities and spaces of the collective and its wider network have become breeding grounds for ideas and knowledge, one of which is permaculture where its advocates promulgate in their spheres of influence. Some of these individuals are accomplished architects who enact change in urban design through sensitively incorporating ecological principles such as using permaculture in development projects. Through this, discourse and knowledge that originated from learning and sharing in the collective gets translated into physical space beyond the collective. Besides space creation, some of these architects engage in discourse and knowledge creation. The interviewee shared about an architect who teaches at a local polytechnic on rethinking existing spaces and transforming them into ecologically and socially meaningful spaces through edible gardens. The collective is also a repository of individuals with unique skills such as one with knowledge of natural farming and environmental impact assessments, who at the same time is a dragonfly specialist who has helped with designing edible gardens in numerous schools and in the collective's first place-based project in a public park.

Another knowledge-to-implementation topic is composting. Composting revalorises organic elements of land and restores its nutrients. Educating urban inhabitants on composting helps to re-establish a connection to the land and its productive and sustaining qualities. This may be something taken for granted in other parts of the world, but to Singapore urbanites who have been mostly disconnected from the land with hardly any rural areas, composting can serve as an entirely new way of valorising land, beyond that of a real estate commodity.

With the myriad food sustainability ideas at the collective that could potentially be turned into projects, composting aligned with the interest of many in the collective. It has solidified into a project centred around composting workshops with locally developed content and collecting food waste for compost-making from select neighbourhoods. This work has garnered the interest of the wider community and even policymakers who are exploring how composting might be integrated into policy. In a conventionally top-down mode of governance in Singapore, such co-learning and co-exploration of solutions is a refreshing shift for citizens and civil society to not only participate but also take the initiative to build social capital and enact changes in social practices. It also aligned with momentum taking place in the larger society, as civil society groups are growing in their efforts to tackle food waste through food rescue. Urban farming outreaches often include composting as part of their programmes, and start-ups are experimenting with scaling up food waste collection in the city. The government is also demonstrating interest in combatting food waste and has been supportive of ground-up initiatives in their multiple approaches and community-based efforts in combatting food waste.

When asked whether composting is part of an effort towards a circular economy, the interviewee replied, "Perhaps the schools and industries use these words. But for me, I am moving beyond the word 'circular', to 'regenerative'. 'Regenerative' is not a familiar word here. 'Circular economy' could mean [adaptation to] net zero [emissions], or turning the waste of a process into inputs for another. For what we are doing, if you make the circle a bit different, then it becomes more of a regeneration. I teach that in making compost, we return life to the soil." As such, composting is an example of an idea generated from the food system to bring about broader environmental benefits and enhance the urban commons. The use of less dominant concepts and terms, and producing local pedagogy is a practice of reshaping and newly generating epistemologies.

Social learning, even through disagreements and arguments, can strengthen social capital (Christoforou A, 2022); a broadening social epistemology, particularly local knowledge of social-ecological systems and applications is a significant gap that civil society groups like the collective can begin to address. While food concerns everyone, there are hardly public discourses on what entails a more desirable food future for Singapore. Civil society through networks like the collective can help to surface, broaden and deliberate over such questions and strengthen societal deliberations and public engagement in these issues.

Spaces

Physical space is an important element that focuses participating members' knowledge and creative energies in crafting projects and bringing them to fruition. Space also has an important role in engaging the collectives' audiences which include the community or residents who live in the vicinity and the wider public. In the case of this collective, space is usually not the driving force nor the centrepiece that propels or holds the collective together. Rather, the collective leverages its loose network revolving around food sustainability before coalescing on projects, whether space-based or not. Thus, it can be said that its social relations and its discourses are the driving forces. However, the spaces that have been nurtured are important for in turn strengthening the social relations, discourse and knowledge building of the collective.

The collective's core project space is its first place-based project Boon Lay Nature Garden which comprises a part of Jurong Central Park. The project is a collaboration with the state's parks authority which wanted to activate an obscure, not well-patronized space in a public garden, and pilot a new project exemplifying sustainable community space to engage with nearby residents. The partner was open to experimentation rather than replicating the typical government programmes like Community-in-Bloom or allotment gardens. The collective was then roped in to introduce ideas new to Singapore to test out and was given significant freehand in designing and programming the space. This space became a holding space for the network and its ideas such as permaculture, syntropy and agroforestry. The implementation process was halting and many of the initial ideas did not pan out because there were too many divergent ideas and voices. It also coincided with the pandemic. It seemed that the initial project scope was too large for the collective that could not seem to move decisively forward, and thus the space eventually allotted was reduced. With the more manageable size, the collective created a biodiverse food forest that consists of edible plants and other plant types that can co-exist in a 'wilderness' habitat with a pond that can support insect and amphibian life.

Besides the core project, there were network-spawned spaces – private spaces belonging to collective members that they opened up for sharing and experimentation. This included a garden in a good-class bungalow with a swimming pool that was transformed into permaculture spaces with a natural pond. As it was private property, there was a lot more freedom in how the landscape could be transformed than it if were a public park. When activities at the property were discontinued, the former participants went and started their own edible garden projects.

Conclusion (Not included)

Bibliography

Bishop ML (2012) The political economy of small states: Enduring vulnerability? Review of International Political Economy, 19(5): 942-960, DOI:10.1080/09692290.2011.635118

Christoforou A (2022) Social Capital and Civil Society in Public Policy, Social Change, and Welfare, Journal of Economic Issues, 56:2, 326-334, DOI:10.1080/00213624.2022.2050142

Diehl, J.A., Sweeney, E.E., Wong, B., Sia, C.S., Yao, H., & Prabhudesai, M. (2020). Feeding cities: Singapore's approach to land use planning for urban agriculture. Global Food Security, 26, 100377.

EIU (Economist Intelligence Unit) (03.06.2022) Asia week ahead: rising food protectionism. https://country.eiu.com/Industry.aspx?Country=Malaysia&topic=Industry&subtopic=Consumer+goods

Erokhin V, Gao T, Andrei JV (2021) Shifting Patterns of Agricultural Trade: The Protectionism Outbreak and Food Security. Vasilii Erokhin, Gao Tianming, Jean Vasile Andrei. (Eds.) Springer, Singapore.

Geels FW (2002) Technological transitions as evolutionary reconfiguration processes: a multi-level perspective and a case-study. Research Policy, 31, 1257-1274.

Geels FW (2019) Socio-technical transitions to sustainability: a review of criticisms and elaborations of the Multi-Level Perspective. Current Opinion in Environmental Sustainability.

GFSI - Global Food Security Index (2022). The Economist Group. https://impact.economist.com/sustainability/project/food-security-index/

GFSI - Global Food Security Index (2019). The Economist Group.

Klerkx L and Rose D (2020) Dealing with the game-changing technologies of Agriculture 4.0: How do we manage diversity and responsibility in food system transition pathways?, Global Food Security, 24, 100347, https://doi.org/10.1016/j.gfs.2019.100347.

Lefebvre H (1991 [1974]) The Production of Space (D. Nicholson-Smith, Trans). Oxford: Blackwell Publishing. (French edition originally published 1974).

Liow ED (2012). The Neoliberal-Developmental State: Singapore as Case Study. Critical Sociology, 38: 241 - 264.

Rut, M., & Davies, A.R. (2018). Transitioning without confrontation? Shared food growing niches and sustainable food transitions in Singapore. Geoforum.

SEC - Singapore Environment Council (2019) Advancing a Circular Economy for Food: Key Drivers and Recommendations to Reduce Food Loss and Waste in Singapore. https://sec.org.sg/pdf/reports/food-loss-study.pdf

SFA – Singapore Food Agency (2021), Singapore Food Statistics 2021, https://www.sfa.gov.sg/docs/default-source/publication/sg-food-statistics/singapore-food-statistics-2021.pdf

Soja EW (1980) The socio-spatial dialectic. Annals of the Association of American Geographers 70(2): 207–225.

The Straits Times (27.05.2024) Mega indoor veggie farm I.F.F.I shuts down in latest blow to local food production. https://www.straitstimes.com/singapore/mega-indoor-veggie-farm-iffi-shuts-down-in-latest-blow-to-local-food-production

Tortajada D and Zhang H (2016) Food Policy in Singapore. Reference Module in Food Science, Elsevier. https://doi.org/10.1016/B978-0-08-100596-5.21083-4.

Territories of urban-rural hybridisation in the agro-ecological transition. A spatial exploration of agro-ecology initiatives in Veneto plain

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Territories of urban-rural hybridisation in the agro-ecological transition. A spatial exploration of agro-ecology initiatives in Veneto plain

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While Food Planning has long been interested in food spaces related to urban and metropolitan contexts, there are few case studies today that consider territories and processes of diffusion and dispersion, where urban settlements and infrastructures mix and hybridise with the rural tissue. However, in recent years, there has been a renewed interest in the territories of urban-rural hybridisation, in an attempt to overcome those spatial categories that continue to structure much of western urban thought (city-country; urban-rural, etc.). In fact, beyond food production and the city-countryside distinction, some scholars question the renewed relationship between urbanism and agriculture and the latter's role in determining the future of inhabited territories in a necessary phase of agro-ecological transition. If numerous urban statistics and policies promote the prospect of a global urban destiny of humanity, the new processes of reterritorialisation of food systems and some traces of back-to-the-land movements, re-interrogate their universality and give rise to the first hypotheses of an urban exodus. The observation of agro-ecology initiatives and the exploration of related emerging tensions, conflicts and imaginaries could help confirm or refute these hypotheses and sketch new scenarios of the future of inhabited territories. Starting from these reflections, the contribution will focus on the construction of the methodology for the research project entitled "Territories of urban-rural hybridisation in the agro-ecological transition", financed by the Vinci program of the French-Italian University (UFI) and built between the École d'architecture de la Ville & des Territoires Paris-Est (Ensa Paris-Est) and the Iuav University of Venice (Iuav). The project stems from the desire of the two partners to collaborate in the construction of a shared knowledge of the territories of urban-rural hybridisation in Europe and in particular on the transformations affecting the spaces of emerging agro-ecological initiatives in the Italian case of the central Veneto plain. How can the emerging agro-ecology initiatives help us rethink the culture of urban and spatial design? What tensions, conflicts and new imaginaries are emerging? What future scenarios lie ahead for the territories of European urban-rural hybridisation?

Keywords: Hybrid territories, Agroecology, transition initiatives, Veneto plain

Introduction

The historical urban-rural divide has played a central role in the emergence of the agro-industrial system. Urban practice and planning have more or less indirectly endorsed these logics (Cronon, 2009), driven also by generally accepted policies and projections that promote the prospect of humanity's global urban destiny (UN, 2019). The resulting metabolic rift has led to a drastic decoupling of social and ecological relations between producers and consumers, in favour of a commodified approach to food (Patel, Moore, 2017). There is now ample evidence of how industrial agriculture contributes to climate change and how dominant food systems, driven by global productivism, are damaging planetary resources. What is needed then is a transition of agriculture towards more sustainable models that promote local and regional food relations that rediscover the socio-ecological values of food, and urbanism and planning have a central role to play in this.

While food systems and spaces of agriculture have been a central theme for urbanism and planning for more than twenty years now, too often food planning has looked at these themes from pioneering experiments focused especially on dense urban and metropolitan contexts. To date, there are few cases that refer to territories and processes of diffusion and dispersion,

where urban settlements and infrastructures mix and hybridise with the rural fabric. The result is that much of the urban policies and agendas of northern countries assume the separation, both physical and conceptual, between urban and rural, tracing the dichotomous pattern that favours the dominant agro-industrial system.

In recent years, scholars and activists have shown the role of agroecology initiatives in both the global south and north in accompanying the transition towards more sustainable models (IPESFood, 2018; HLPE, 2019). Beyond food production, some scholars in the field of urban studies question precisely the renewed relationship between urbanism and agroecology and the latter's role in determining the transition of inhabited territories. Agroecology initiatives are practices that can refound the heart of urban planning practice, reinterrogating the absolute validity of planetary projections of a general urbanisation of the population (Marot, 2019). A transformation of the food system based on agroecological urbanism requires radical approaches that go beyond just the urban context and traditional urban-rural linkages (Tornaghi, Deahene, 2021).

Based on these reflections, the paper focuses on the construction of the methodology for the research project entitled "Territories of urban-rural hybridisation in the agro-ecological transition" inscribed in the Vinci program of French-Italian University (UFI) and constructed between École d'architecture de la Ville & des Territoires Paris-Est (Ensa Paris-Est) and the Iuav University of Venice (Iuav). The project stem from the desire of the two partners to collaborate in the construction of a common knowledge on the territories of urban-rural hybridisation in Europe and, in particular, on the transformations affecting the spaces of emerging agro-ecological initiatives in the Italian case of the Veneto plain. The project is part of a line of research that deals with this hybrid territory, originally defined as *città diffusa*, a territory where urban and rural characteristics are intertwined. The hypothesis is that the observation of agroecology initiatives and their relations with urbanism could bring out tensions, conflicts and renewed imaginaries that could contribute to building new theoretical and strategic frameworks to overcome the urban-rural distinction that dominates urban and food policies and to outlining new scenarios on the future of inhabited territories.

The paper builds on some initial reflections put forward within the Vinci project. The text briefly reconstructs the evolution of urban studies around agrarian spaces within the Iuav scholarly community, identifying cognitive mutations and recent emerging themes (1), showing that the theme of the relationship between agroecology and urbanism still remains to be explored. Thereafter, the contribution will explain the reasons why it is now necessary to explore agroecology initiatives in this specific hybrid territory in a more refined manner (2). Finally, the contribution will then present the objectives, methodology and as well as the expectations of the research, and will conclude on some issues and limitations that the research could address.

Veneto central plain, a hybrid territory in an agroecological transition?

Spaces of agriculture in urban studies in Veneto

The agricultural space of urban-rural hybrid territories is one of the materials '"too often forgotten in the studies dedicated to the *città diffusa*" (Ferrario, 2009:130). Often considered as a background to urbanisation, or a victim of it, it has instead had great importance on how the *città diffusa* came into being and how it may one day face new challenges linked to sustainability and eco-climatic evolutions.

Agrarian space has been a topic addressed by Iuav scholars at least since the mid-1980s, but from the point of view of agrarian economics and evaluation (Reho,1985). The issue is approached at the beginning through the problem of land consumption, tracing the traditional disciplinary separation that saw "rural" space as the prerogative of agronomists and geographers, while "urban" space as the main object of study of urbanists and planners. Beginning in the late 1980s, however, the emergence of the phenomena of settlement dispersion also prompted planners and urbanists to consider the unprecedented relations

between these two spatial domains (Indovina, 1990; Secchi, 1993), even though agricultural space was not immediately identified as a theme in itself.

With the advent of the 2000s, the territorial dimension was confirmed as a useful paradigm for overcoming the dichotomous approach, thanks also to the emergence of new digital cartographic tools and a new sensitivity to the landscape issue. These developments lead to a new season of studies where the role of agrarian logic in the urbanisation process of the Veneto plain is also investigated. The *città diffusa* was in fact born in a fertile alluvial plain, around and between a series of medium-sized towns and a settlement structure that was already historically polycentric and dispersed. From its origins, this settlement structure followed certain agrarian logics linked to the natural hydraulic and irrigation system and a dense network of roads. All these elements ordered the built-up space and its materials, aggregated over time according to specific rules and processes. Iuav scholars then considered the need to (re)design this territory precisely from the materials from which it is constituted (Munarin, Tosi, 2001; Viganò, Fabian, Secchi, 2016).

Agricultural space only became a central theme for urban studies from the end of the first decade of the century, particularly with the contribution of Viviana Ferrario (2009). The scholar looks at the role of this space as material for the design and transformation of the contemporary city. Ferrario puts forward the idea that, contrary to what has traditionally been claimed, urban sprawl has made it possible to preserve the ecological and cultural richness of the territory and that "Veneto central plain is not an urbanised countryside: [but rather] it is a metropolis with a lot of agriculture inside it" (Ferrario, 2009:139). This inversion of gaze – from an urbanised countryside, thus assaulted by urbanisation, to an idea of a large city-territory that integrates agricultural areas within it – is useful to understand the strong and constructive link that there is (or that there could be again today) between inhabitants-consumers and producers.

From this moment on, scholars begin to bring out the multifunctional character of the agricultural space that includes food, energy, leisure, biodiversity, and water security. Among these themes, that of food emerges strongly, at a time when the new millennium pushes the start of post-industrial agriculture and the 2008 food crisis poses the urgency of finding new ways to feed the planet. These events then drive scholars to bring new attention to the relationships between urban spaces and agriculture: emerging practices of urban gardens, proximity markets and social agriculture, new city-countryside pacts and new relationships between agriculture, cities and spatial planning.

In recent years, the new role of urban agriculture and food policies in urban and territorial agendas, as well as the Covid-19 health crisis, have confirmed food as new and central issue for a new generation of Venetian scholars. These approach the relationship between food and territory today through different lenses, driven also by new European-driven research projects: the conflicts and frictions between agricultural activities linked to agro-food productivism and inhabited areas (Basso, Fregolent, 2021); the contribution of urban and peri-urban agriculture to planning policies (Lucertini, Di Giustino, 2021); the complexity of the Veneto food system and its spatial transformation (De Marchi, 2020). These scholars are therefore opening up new thematic pathways that show how the balance between food systems, agricultural activity and dispersed settlements is crossed by new processes.

In the light of this analysis of the literature, we can then confirm that the topic of the relationship between agroecology and urbanism in the Veneto plain is still unexplored, as well as those very initiatives that are accompanying the necessary agroecological transition still remain to be investigated in a more refined manner.

A necessay survey of agroecology initiative and urban planning in the Veneto plain

The reasons that prompted the Vinci research project to consider the urgency of a focus on agroecology initiatives and their relationship with urban planning in the Veneto plain are several, but we will mention two in particular.

First of all because the Veneto plain and its dominant food and production system is, like all western countries, highly unsustainable and dependent on fragile and unstable global markets. In fact, the country's food system is highly dependent on imports, despite the fact that the available agricultural land can offer a good capacity for local sustenance and supply (Coldiretti, 2022). In this sense, the Veneto plain is a good example, as shown in a recent article by Ferrario and D'Angelo (2024). In Veneto, the area dedicated to agriculture accounts for more than 65% of the total surface area, and its proximity to urban areas represents a high potential for food self-sufficiency, despite the fact that much of this area is used for the production of animal feed for export. The authors hypothesise, however, that the agricultural transition of the coming years may change this situation, and that land and agrarian landscapes will undergo a profound transformation driven by European policies for the reconstruction of agroecosystem networks, organic farming and quality certification, all of which are supported by agroecological practices. For the authors "representing these changes is fundamental to predicting transformations and imagining scenarios for a just and sustainable future, enhancing local food potential" (Ferrario, D'Angelo, 2024:74).

Another reason behind the Vinci project is that agricultural space continues to be neglected by current urban and planning policies and instruments. It is in fact only considered by rural and autonomous farm-oriented instruments and policies, despite the still strong relations between small producers working through peasant or agro-ecological practices and inhabitants-consumers. The condition of urban-rural hybridity, in fact, has counteracted the total industrialisation of agriculture, and the Veneto plain is still characterised by small and very small-scale production (vegetables, wine products, small-scale dairy) (De Marchi, 2020). This condition has therefore made it possible to preserve the small-scale peasant production that offers the inhabitants of the plains fresh and healthy products derived from socially and ecologically sustainable practices, often through direct sales or farmers' markets, the latter of which are rapidly increasing[1]. It is then necessary to construct a new representation of these relations between those who cultivate and those who live, trying to understand if and how urban policies and plans are fostering these relations or opposing them, as well as to understand in what ways urban planning can support the launch of new agro-ecological initiatives, investigating the hypothesis of an ongoing urban exodus or back-to-the-land movement.

Objectives, methodology and deliverables

The research thus starts from these fundamental reflections and is built around three main objectives. The first is to contribute to the ongoing debates on the relationship between agroecology and urbanism, in order to build a broader sharing of knowledge and research methods on the territories of hybridisation in Europe and in particular between France and Italy. In fact, the research project aims to contribute to building new tools to face the challenges of agroecological transition also in the face of new European and national policies[2]. These policies reinterpret the phenomenon of urban sprawl that has always been seen as one of the causes of uncontrolled artificialisation, but the model of the compact city and especially that of the dense metropolis is showing its limits (Bihouix et al., 2022). The growing interest in the territories of urban-rural hybridisation in France is also particularly lively, but it is still recent and much remains to be explored, and a dialogue between the two countries can contribute to building a specific reflection within this debate. Finally, the research aims to sketch out some hypotheses around possible future scenarios of urban-rural hybrid territories, relying on the imaginaries that have emerged from the observation of agro-ecology initiatives, specific to

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[1] A reality, that of farmers' markets, which is gaining ground in the region, as demonstrated by the Veneto Region's census that indicated 50 farmer's markets in 2009, compared to 107 in 2022 (Regione Veneto, 2009; 2020).

[2] Particularly taking into account the new European objectives of the 'No net land take by 2050' policy affecting both Italy and France.

these territories and in an Italian geographical and climatic context not so different from the French one.

Starting from this, the research will therefore be structured in three main stages. The first is dedicated to the construction of new and fertile alliances between the knowledge of agroecology and urbanism and was launched with a seminar entitled "Urbanism and agriculture: dialogues between Italy and France", which was held in March 2024 at Palazzo Badoer in Venice[3]. This first stage will then be devoted to an in-depth analysis of the existing literature on the relations between agroecology and urbanism (at the European, national and regional scales) and on the related policies. The second half will be devoted to field explorations and information gathering through mapping, participatory observation, and interviewing. This second part of the project will proceed following the transect method. As conceived by its creator (Geddes, 1925), the transect will cover a sequence of four specific pedo-climatic conditions: the high piedmont plain; the dry plain beyond the line of the resurgences; the humid and clayey low plain; and the coastal territory with the humid lagoon territory. The intention is to investigate in this area first of all the existing Community Supported Agriculture networks (producers, distribution points, consumers), their location in the territory and their functioning. Then a case study of an agro-ecology initiative will be identified for each of these four sub-transects where precisely the relations between their functioning and the planning context in force will be investigated. The aim will be precisely to identify possible tensions, conflicts or new alliances and existing strategies in order to build a clearer cognitive framework. Finally, the third stage will be devoted to the editing of all the materials and information gathered in a final report, where some hypotheses on possible micro-comparisons between France/Italy will be sketched out and some scenarios will be outlined. The work will end with the organisation of a final closing seminar that will once again bring together key figures in the debate between the two countries and others on a European scale.

Finally, the research will produce some useful tools specific to the case study and the research context. As the research experience should make it possible to construct a common and novel language between the two countries, a common glossary in French and Italian will be produced, capable of structuring comparable descriptions overcoming existing conceptual dualisms and dichotomies. In addition, an open repertoire of agro-ecological transition initiatives will be constructed: the recognition of these initiatives will necessarily pass through the construction of critical and synthetic maps, capable of revealing unedited geographies of a long-studied territory. This repertoire will report on the research work on the relations between initiatives and urban planning, revealing tensions and conflicts, but also useful measures and tools for the construction of new alliances. The document will conclude with a list of possible future scenarios sketched out in order to situate new hypotheses and research questions in the territory.

Conclusions

The scientific interest of the research touches on very different aspects both on a possible transdisciplinary theoretical contribution as well as on aspects specifically relevant to urban culture. The outcomes of the research could in fact contribute in a transversal way to the various fields that are now increasingly interested in agroecology in addition to agronomy (social sciences, geography, economics, etc.) with a specific approach to the case of the territories of urban-rural hybridisation. The theoretical reflections, in fact, will be able to fit into that research panorama in the European context that is increasingly questioning, beyond the large conurbations, the role that low-density settlement territories can play in agroecological transition processes. In particular, the research will contribute to the reflection on the role of rural and agro-industrial contexts: similarly, the attention of the scientific and political debate is

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[3] The aim of this first meeting was to bring together some key figures in the contemporary debate on the relations between agriculture and spatial planning with french and local actors of the Venice lagoon, who are also already involved in other Iuav research projects on the theme of food (Cities2030) and ongoing climate change (GREW).

increasingly turning to hybrid territories, characterised by the proximity between primary production and small-scale manufacturing. Finally, the outcomes of the research will be able to be part of the ongoing debate on agro-ecology starting from specific cases with reference not only to productive practices, but rather and above all to practices that question themselves on the dimension of social and environmental justice.

To conclude, the project will have to pay attention to a few more general issues that could have important consequences for the research: first of all, great care will have to be taken in the use of the term agroecology and the way it is applied to this specific territory; secondly, an attempt will have to be made to measure the reality of this ongoing transition, as well as its actual embodiment in territorial practices and processes; finally, the research will have to proceed cautiously around the hypothesis of an urban exodus and the back-to-the-land movements, taking into account the very specific life trajectories that characterize the population and the producers of Veneto plain.

Bibliography

Basso, M. and Fregolent, L. (2021) 'Fighting against monocultures: wine-growing and tourism in the Veneto Region', in Fregolent L. e Nello O., eds. *Social movements and public policies in Southern European cities*, Cham: Springer, pp. 151-165.

Bihouix, P., Jeantet, S., De Selva, C. and Klugstertz, E. (2020) *La ville stationnaire : Comment mettre fin à l'étalement urbain*?. Actes Sud.

Coldiretti (2022) '*1MLN di ettari per sovranità cibo*', Coldiretti online: https://modena.coldiretti.it/news/1-mln-di-ettari-per-sovranita-cibo/).

Cronon, W. (2009) *Nature's metropolis: Chicago and the Great West*. W. W. Norton & Company.

De Marchi, M. (2020) 'Foodspace. Leggere le trasformazioni territoriali attraverso lo spazio del cibo: il caso Veneto', in *Archivio di Studi Urbani e Regionali*, n. 128, pp. 80-105.

HLPE (2019) *Agroecological and other innovative approaches for sustainable agriculture and foodsystems that enhance food security and nutrition*. A report by the High-Level Panel of Expertson Food Security and Nutrition of the Committee on World Food Security, Rome.

IPES-Food (2018) *Breaking away from industrial food and farming systems: Seven case studies of agroecological transition*.

Lucertini G. and Di Giustino G. (2021) 'Urban and Peri-Urban Agriculture as a Tool for Food Security and Climate Change Mitigation and Adaptation: The Case of Mestre'. *Sustainability 2021*, 13(11), 5999; https://doi.org/10.3390/su13115999

Marot S. (2019) *Agriculture and architecture: Taking the country's side*. Poligrafa.

Ferrario, V. (2009) 'Agropolitana: Countryside and urban sprawl in the Veneto region (Italy)'. *Revija Za Geografijo,* 4(2), pp. 129–142. https://doi.org/10.18690/rg.4.2.3195.

Ferrario, V. and D'Angelo F. (2024) 'Mapping multifunctional agro-urban landscape to manage edible cities in North-Eastern Italy', in Bohn, K. and Tomkins, M. (2024) *Urban food mapping: Making Visible the Edible City*. Taylor & Francis, pp. 64-75.

Geddes, P. (1925) 'The Valley Plan of Civilization'. *Survey,* LIV, pp. 288-290.

Indovina, F. (1990) 'La città diffusa'. Indovina, F. et al. (eds.) *La città diffusa*. Daest, pp. 19-43.

Munarin, S. and Tosi, M. C. (2001) *Tracce di città. Esplorazioni di un territorio abitato: l'area veneta*. Franco Angeli.

Patel, R. and Moore, J.W. (2017) *A history of the world in seven cheap things: A Guide to Capitalism, Nature, and the Future of the Planet*. Univ of California Press.

Reho, M. (1985) 'Agricoltura e governo del territorio'. *Urbanistica*, 78, p.109.

Secchi, B. (1993) 'Le trasformazioni dell'habitat urbano in Europa: alcuni appunti'. *Quaderno della ricerca sulle trasformazioni dell'habitat urbano in Europa*, n. 0, p. 7-15.

Tornaghi, C. and Dehaene, M. (2021) *Resourcing an agroecological urbanism: Political, Transformational and Territorial Dimensions*. Routledge.

Viganò, P., Fabian, L. and Secchi, B. (2016) *Water and asphalt: The Project of Isotropy*. Park Publishing (WI).

Wezel, A., Grard, B. and Gkisakis, V. (2023) *Mapping the development of Agrecology in Europe*. *Country Reports Series*, Volume 1.

United Nations, Department of Economic and Social Affairs, Population Division (UN), (2019) *World Urbanization Prospects 2018: Highlights* (ST/ESA/SER.A/421).

Strategizing regional food systems as pathways towards sustainability transitions: The case of Lisbon's Metropolitan Area

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Strategizing regional food systems as pathways towards sustainability transitions: The case of Lisbon's Metropolitan Area.

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Abstract

Sustainability Transitions and the complexity of its underlying challenges place a tremendous transformative pressure on food systems, putting the food transition on the forefront to generate co-benefits for a multitude of actors and players, translated into positive impacts on the economy, health, the environment, the climate adaptation and on the society.
Various international strategies and commitments recommend that this transition be fully achieved by 2030, contributing to the goal of carbon neutrality, climate adaptation and biodiversity conservation, increasing physical and mental well-being, especially for the most vulnerable groups of the population.
A sustainable food transition has thus recently gained increased relevance in metropolitan spatial planning and development policies. However, the complexity of steering this process and delivering transformative change sits far beyond any spatial and territorial constraints, to include the intricate, and often conflicting dynamics of the governance of food environments.
As an outcome of a five-year intensive process, the Food Transition Strategy for the Lisbon Metropolitan Area was delivered at the end of 2023 and is now ready to be implemented underpinning a vision to reconfigure the evolution trajectories of the metropolitan food system by 2030.
In this paper, we critically review the experience of strategizing this regional food system from a bottom-up approach by interlinking applied research with the current regional policies into force and the action undertaken by a backboned food policy network that has preliminary established the baseline for the Food Transition Policy to come up into this achievement.

Keywords: Food Transition, Food System Strategy, Food System Planning, Food Policy Network, Lisbon Metropolitan Area.

Introduction

Food Transition is one of the components of the transition to sustainability, which involves a process of transformation of food systems, the adoption of new practices by the actors and institutions involved and the development of skills for the consumption of more nutritional, sustainable, and inclusive meals and food (Bulah et al., 2023; Sonnino, 2023; Wood et al., 2023; Zasada et al., 2019). It should be capable of generating co-benefits for the actors and interveners in their various sectors of activity, with positive impacts on economy, health, environment, climate, landscape, and society (Tribaldos & Kortetmäki, 2022). For this to happen food systems need to be planned by strategizing their resources, structures, equipment, and activities capable of ensuring the food supply of a given population, as a result of the interrelationship and dynamics of various sectors, including the production, processing, distribution, and treatment of food waste (Moragues-Faus & Morgan, 2015; Sonnino et al., 2019). Therefore, urban food system planning consists in organizing the food system in biophysical, spatial, and functional terms, through a territorial planning exercise that allows foreseeing sustainable and resilient ways of supplying healthy and accessible food to a given city or city-region (Kasper et al., 2017), including 3 phases: *(i)* definition of a strategy based on a vision for a given time horizon; *(ii)* definition of a strategic framework and action plan, which embody the objectives to be achieved and their operationalization through interaction between

the public, private, governmental, and non-governmental sectors; *(iii)* integration of the guiding principles into territorial management instruments or other public policies, based on the articulation between policy, knowledge, and action.

In this paper we introduce the phases 1 and 2 of a metropolitan food transition strategy that is now starting to be established in the Lisbon Metropolitan Area, in Portugal.

Strategic context for envisioning the regional food system by 2030

It is widely recognized that the regions, whether in a geographical, functional, political or administrative sense, are increasingly playing a key role in the design and implementation of public policies that mediate European and national political agendas and their real local impact on territories and citizens (López-Estébanez et al., 2022). The regional context of regional public policies in force in the LMA are particularly adequate to set up the food transition as making part of this strategic approach.

The Lisboa 2030 Regional Strategy, in operation since 2020 is the main guiding document for the regional food transition which, due to the expression of the metropolitan food system, can contribute to the objectives of cohesion and convergence in the country and in Europe through the role that this system plays in economic growth, in reducing territorial and social asymmetries and in pursuing governance solutions that actively involve strategic regional players, the public, private, and associative sectors in the metropolitan region.

Bearing in mind that the ETA-AML pursues a multi-sector, multi-scale, and multi-actor approach, it is understood that it should have a positive impact on restoring the dynamics of wealth creation and on internal and external regional cohesion, particularly through increasing dynamism between urban, peri-urban, and rural territories, in tandem with the blue economy. At the same time, the ETA-AML is an opportunity to integrate sectoral policies such as those relating to the territory, the economy, health, agriculture, and the environment, creating opportunities and synergies with an effect on innovation and territorial competitiveness, particularly in the context of the 2021-2027 funding framework and the challenges set for 2030 - 2050, particularly within the framework of the European Green Deal.

The planning of the metropolitan food system is therefore in line with the productive specialization observed in the LMA territory, specifically in business services, transport, logistics and distribution, energy, the environment, the agri-food industry, education, and health. Hence, it is understood that the increase of value chains from the production, processing, distribution, consumption, and treatment of food waste is an innovative approach to the territory where the dynamics of local and regional food systems take place, with a positive impact on the sustainability and resilience of the region in the context of climate change. In this context, the ETA-AML will also play an important role in implementing the strategic framework of the Metropolitan Plan for Adaptation to Climate Change (PMAAC - AML), particularly with regard to the sectoral objectives of adapting the agricultural, forestry, and agri-food sectors, in plant and animal terms, and promoting proximity food supply circuits between producers and consumers, based on the conservation and sustainability of soil, water, biodiversity, and landscape resources. The PMAAC also includes agendas to which the implementation of the ETA-AML is geared, such as the sectoral metropolitan agendas for economic adaptation, energy and energy security, water resources, human health, coastal zones, and the sea.

On the other hand, this strategic framework is the result of combining characterization and diagnosis studies and the establishment of a Food Policy Network, the FoodLink – Network for the Food Transition Network in the LMA, which drove a participatory process and the involvement of stakeholders that, since 2019, influenced the main guidelines contained in the strategic instruments that contextualize the food transition in regional policies and in the 2021-2027 funding framework (Oliveira, 2022). The results obtained make it possible to identify a set of challenges and priorities for the region which, at the same time, are translated into a strategic vision, which defines the main strategic axes, the general and operational objectives and the respective action plan.

Despite the metropolitan food system embodies a context of enormous complexity and systemic interactions for which no planning exercise has ever been carried out with the aim of relating it to public policies, knowledge, and action, in order to make it more efficient, productive, and sustainable. The ETA-AML is thus the first opportunity to gather the available information, develop a diagnosis, and establish intervention priorities, that is, the vision for the goals to be achieved by 2030, the objectives and actions to start a conscious, comprehensive, participatory, and lasting food transition process.

Strategic planning exercise aims to establish the main axes on which ETA-AML to achieve the general and operational objectives embodied in its Action Plan. The strategic framework is based particularly on the diagnosis and the results of all the information gathered during the participatory process in which around 120 entities from the metropolitan food system were invited. Following the 6 axes that frame a set of 18 actions the ETA-AML is now ready to be implemented as such:

AXIS 1 - ENHANCING PRODUCTION AREAS IN REGIONAL AND MUNICIPAL LAND USE PLANNING AND MANAGEMENT

General Objectives:

1. Implementing the ETA-AML in a systemic and participatory way, with the aim of safeguarding the natural resources associated with production systems, including rural land with strategic potential for agricultural production, fisheries resources in the sea and aquaculture in estuarine systems, integrating this topic into territorial management instruments and the various public policy instruments.
2. Integrating the food transition into territorial planning with the aim of meeting goals in terms of food safety, economic and energy efficiency, environmental and landscape quality, biodiversity conservation, adaptation to climate change, job creation, promoting urban-rural dynamics, the circular economy, and local development.
3. Valuing the Metropolitan Ecological Structure according to a multifunctional and systemic approach, integrating, whenever possible, sustainable production areas, connecting urban and rural areas, valuing opportunities for production, recreation, leisure, and well-being among the local population.
4. Promoting good sustainable production practices taking into account the soil, water, biodiversity, and energy nexus.
5. Promoting multifunctionality and knowledge associated with food production areas.

Operational objectives:

1. Support the development of strategies for transition in local food systems.
2. Prioritize the areas identified for the installation of Multifunctional Agrigood Parks (PAM) as agricultural and livestock production areas, in close articulation with the location of agri-food processing, logistics, and food distribution centers, along with an extensive universe of consumers.
3. Supporting sustainable production methods, in particular by supporting and encouraging the creation of organized producer structures.
4. Support sustainable forms of fishing and aquaculture.

AXIS 2 - MODERNIZATION AND IMPLEMENTATION OF NEW LOGISTICS, DISTRIBUTION AND FOOD PROCESSING SOLUTIONS

General Objectives:

1. Assume food transition as a vector for socio-territorial cohesion and the generation of local economic added value, stimulating entrepreneurship and creating market opportunities for micro and small businesses

Operational objectives:

1. Support the organization of short circuits between rural and urban areas to guarantee proximity supplies, strengthening the link between producers and consumers.
2. Support the valorization of local markets, both permanent and temporary, in order to increase the availability of healthy and sustainable local food at fair prices.
3. Install and modernize agri-food processing units that enable job creation and local and regional development.

AXIS 3 - ENCOURAGING HEALTHY AND SUSTAINABLE CONSUMPTION

General Objectives:

1. Increase food literacy and equity in access to safe food.
2. Create a brand for safe, nutritious, sustainable and certified local agri-food and fisheries products.
3. Promote the reduction of food waste in the different links of the food chain (production, processing, distribution and consumption).

Operational objectives:

1. Train and educate consumers about the relationship between healthy eating, environmental sustainability and public health, particularly in conjunction with private and collective catering, for example through an Ecollabeling campaign.
2. Articulate the brand's image at regional and local level with the legislation in force (DL 113/2006 of June 12 - Establishes the rules for implementing, in the national legal order, Regulations (EC) Nos. 852/2004 and 853/2004 of the European Parliament and of the Council of April 29 on the hygiene of foodstuffs and the hygiene of foodstuffs of animal origin, respectively).
3. Create a network of organizations committed to reducing food waste, in conjunction with food banks.

AXIS 4 - ORGANIZATION OF COLLECTION CIRCUITS AND MODERNIZATION OF ORGANIC FOOD WASTE TREATMENT AND RECOVERY SYSTEMS

General Objectives:

1. Set up a network of adhering entities
2. Modernize organic food waste treatment and recovery systems

Operational objectives:

1. Create commitments for the process of selecting organic food waste of enough quality for the recovery process to produce substrate for agricultural use.
2. Install efficient circuits for the collection and recovery of organic food waste with the capacity to leverage innovative processes to take advantage of by-products and intersectoral symbioses.
3. Invest in new technology that increases the efficiency of the organic waste treatment and recovery process.

AXIS 5 - TRAINING, INFORMATION AND EDUCATION

General Objectives:

1. Ensure the necessary training for the food transition.
2. Provide science-based information, using accessible language and encouraging the adoption of practices with a positive impact on the food transition
3. Promote support for food literacy in schools

Operational objectives:

1. Offer training programs accessible to all actors in the food system
2. Program training actions for agents in all sectors of the food system.
3. Create appropriate content and materials for food literacy in schools

AXIS 6 - RESEARCH AND KNOWLEDGE

General Objectives:

1. Support interdisciplinary research projects whose results can fill information gaps in the knowledge of the metropolitan food system.
2. Support transdisciplinary action-research projects to strengthen knowledge of the metropolitan food system

Operational objectives:

1. Articulate the funding instruments for research and the needs for implementing public policies and scientific support in decision-making.

Final takeaways

Coordinating a food transition strategy implementation is a considerable challenge that implies an complex governance model and the operational means that must consider mostly:

- The need to invest in knowledge and research for a more in-depth understanding of the regional food system and its interdependence with the food basin that supplies the region, whether at interregional, national or international level, with an aim of a faster and more efficient food transition;
- The creation of new business models and the modernization of the current ones, seeking to increase the weight of revenue in the regional PIB, the VAB (agricultural and agri-food), and job creation in all the components of the regional food system;
- A clear perspective of coordination between land use planning and the management of resources inherent to the sustainable functioning of the food system, with special emphasis on land use and occupation in relation to ecological suitability and urban pressure;
- Increasing the area of sustainable production and creating product certification and traceability solutions that guarantee food safety and include the externalities inherent in the sustainable management of the food system;
- Technical and financial support for structures and processes that can ensure safe, healthy, and sustainable food for the most disadvantaged groups of the population, particularly through program contracts for the provision of school meals and collective catering or intervention in municipal markets and other forms of marketing local food products;
- Technical and financial support for the development and implementation of strategies for the transition of local food systems and their governance structures which can ensure the evaluation and monitoring of the transformation of these systems and the impacts on the economy, health, the environment, and society.

References

Bulah, B. M., Tziva, M., Bidmon, C., & Hekkert, M. P. (2023). Incumbent entry modes and entry timing in sustainable niches: The plant-based protein transition in the United States, Netherlands, and United Kingdom. *Environmental Innovation and Societal Transitions*, *48*. https://doi.org/10.1016/j.eist.2023.100735

Kasper, C., Brandt, J., Lindschulte, K., & Giseke, U. (2017). The urban food system approach: thinking in spatialized systems. *Agroecology and Sustainable Food Systems*, *41*(8), 1009–1025. https://doi.org/10.1080/21683565.2017.1334737

López-Estébanez, N., Yacamán-Ochoa, C., & Mata-Olmo, R. (2022). The Multifunctionality and Territoriality of Peri-Urban Agri-Food Systems: The Metropolitan Region of Madrid, Spain. *Land*, *11*(4), 588. https://doi.org/10.3390/land11040588

Moragues-Faus, A., & Morgan, K. (2015). Reframing the foodscape: the emergent world of urban food policy. *Environment and Planning A*, *47*(7), 1558–1573. https://doi.org/10.1177/0308518X15595754

Oliveira, R. (2022). FoodLink—A Network for Driving Food Transition in the Lisbon Metropolitan Area. *Land*, *11*(11), 2047. https://doi.org/10.3390/land11112047

Sonnino, R. (2023). Food system transformation: Urban perspectives. *Cities*, *134*. https://doi.org/10.1016/j.cities.2022.104164

Sonnino, R., Tegoni, C. L. S., & De Cunto, A. (2019). The challenge of systemic food change: Insights from cities. *Cities*, *85*, 110–116. https://doi.org/10.1016/j.cities.2018.08.008

Tribaldos, T., & Kortetmäki, T. (2022). Just transition principles and criteria for food systems and beyond. *Environmental Innovation and Societal Transitions*, *43*. https://doi.org/10.1016/j.eist.2022.04.005

Wood, A., Queiroz, C., Deutsch, L., González-Mon, B., Jonell, M., Pereira, L., Sinare, H., Svedin, U., & Wassénius, E. (2023). Reframing the local–global food systems debate through a resilience lens. *Nature Food*. https://doi.org/10.1038/s43016-022-00662-0

Zasada, I., Schmutz, U., Wascher, D., Kneafsey, M., Corsi, S., Mazzocchi, C., Monaco, F., Boyce, P., Doernberg, A., Sali, G., & Piorr, A. (2019). Food beyond the city – Analysing foodsheds and self-sufficiency for different food system scenarios in European metropolitan regions. *City, Culture and Society*, *16*, 25–35. https://doi.org/10.1016/j.ccs.2017.06.002

The role of participative foresight in creating a sustainable food supply for the Brussels-Capital Region

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The role of participative foresight in creating a sustainable food supply for the Brussels-Capital Region

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Foresight encompasses various methods for exploring and analyzing the future in a participatory way. Within the food and agricultural system, foresight is often employed to address future uncertainties, leading to the development of long-term future scenarios. In addition to generating knowledge and providing an initial conceptualization of future change, the impact of such exercises can result in influencing policy outcomes. Unlike predicting the future using logical reasoning, foresight attempts to integrate complexity, aiming to stimulate creative thinking. Therefore, the foresight process is crucial, as it unites diverse perspectives and improves stakeholders' resilience in tackling future challenges.

While there is a general consensus that participation is crucial in foresight processes, questions remain regarding which specific actors should be involved and how they should be involved. A trade-off exists between capturing heterogeneity in participation and the so-called productivity of the process. In this context, involving policymakers proves crucial for influencing policy decisions, but it is equally necessary to ensure adequate representation from the grassroots level.

By discussing various examples of foresight processes in the context of urban food systems and reviewing relevant foresight literature, this paper aims to provide an answer to the question of which roles actors are assigned to in futuring exercises of a city's food system. Additionally, it aims to offer a more systemic analysis of how participants are identified for exploring sustainable solutions for the numerous crises currently confronting the urban food system.

Keywords: urban food systems, foresight, participatory processes

Introduction

Increasingly, cities recognize the importance of transforming their food systems into a more sustainable model (Hebinck et al., 2021, Moragues-Faus et al., 2024). Cities are ideal places for grassroots initiatives to develop, and to collectively tackle the prevailing sustainability challenges (Gernert et al., 2018, Ilieva, 2017). Since 2015, more than 100 cities have been working on a food policy that ensures healthy and affordable food for their inhabitants (Milan Urban Food Policy Pact, 2015, p.2). Moragues-Faus et al. (2024) emphasize that urban governance can make urban food systems more sustainable when the concepts of time, place, relationships, diversity, and power are considered collectively. In what follows, foresight is presented, a methodological process that can potentially be used for urban food governance. The following paragraph describes foresight in detail, along with how it can be employed in the context of urban food systems.

Foresight refers to methods of exploring the future, which are often described as turbulent, uncertain, complex, and ambiguous (Ramírez and Wilkinson, 2016). By identifying key future uncertainties and integrating them into scenarios, the foresight technique helps to anticipate the future and to be better prepared. Since the 1990s, strategic foresight has been used to support businesses by identifying and studying future changes, and accordingly preparing strategic steps (Rohrbeck et al., 2015, Schwarz, 2023). Foresight has expanded its application to various fields and is now used for complex or 'wicked' societal and natural problems that need to be approached systematically, interdisciplinarily, and participatively (Bourgeois et al., 2017, Rittel and Webber, 1973). Characteristics of foresight exercises is the use of diverse methods and the goal to create long-term future visions that can be multiple (Bourgeois and Sette, 2017, Calay et al., 2022). In this document, we adopt the following definition of foresight: "A policy-oriented approach assuming that the future is multiple, uncertain, and potentially radically different from the present. It aims at envisioning and exploring in a systemic and holistic way alternative images of the future" (Dator, 2002, Fransolet, 2022).

Foresight has the ability to create political arenas by holding critical dialogues among different stakeholders about the various futures of a system (Vervoort & Gupta, 2018, Rutting et al. 2022). Therefore, foresight can be seen as a governance structure that is able to bring together the concepts of time, place, relationships, diversity, and power in one place. Building on the framework by Moragues-Faus et al. (2024), foresight thus has the potential to inspire transformative impact. In what follows, these concepts are elaborated briefly for the case of foresight.

Regarding the time concept, one can only work towards sustainable futures when the historical context is studied in detail. There is no systemic approach that encompasses every foresight exercise, making the local context a crucial element in foresight (Keenan and Popper, 2008). Moreover, each foresight should be seen as an innovative exercise that uses a combination of methods (Keenan and Popper, 2008). The relational component described by Moragues-Faus et al. (2024) emphasizes the need to not only look at the city scale but to also include broader themes at regional, national, and global levels. Hebinck et al. (2018) highlight that the highest degree of change is only attained in a scenario where an opportunity for change arises from local initiatives supported by institutional and political governance. Different policy levels need to be transcended, and a multiscalar approach is required, indicating a high need for diversity (Moragues-Faus et al., 2024). Wicked problems cannot be addressed without embracing diversity and complexity and bringing together and enabling collaboration among different perspectives, values, experiences, and knowledge (Duncan and Claeys, 2018, Rittel and Webber, 1973). Finally, power structures must be studied and exposed to enable real change (Galli et al., 2017, Hunsberger and Kenyon, 2006).

Now that the importance of foresight has been demonstrated, the following paragraphs will emphasize the participation process of a foresight exercise. Thanks to its wide range of applications, there is no unambiguous way to conduct foresight, and several matters need to be considered to achieve a good, successful result. The following paragraphs will elaborate on this.

Participation

Despite the fact that many foresight cases effectively trigger action, Bourgeois & Sette (2017) state that the focus should not only be on achieved results, but that the process of participation is a positive effect in itself. Rather than trying to agree on a simplified reality, participatory processes tackle the prevailing complexity of future problems by accepting the coexistance of different realities (Rutting et al., 2022, Vervoort et al., 2015). Those different versions of reality are formed by combining the different experiences and knowledge people carry with them (Pereira et al., 2019, Vervoort et al., 2015). Moreover, there is a social or co-learning effect that stems from the sharing experience (Pereira et al., 2019). In this sense, knowledge can be enriched, and relationships can be formed that enhance future collaboration and tolerance (Johnson et al., 2012, Pereira et al., 2019, Vervoort et al., 2015).

However, the occurrence of such positive effects stems from the interaction between the different participants and thus the design of the process (Hebinck and Page, 2017, Reed et al., 2009). This must be done correctly and effectively to achieve the desired effects of participation. A qualitative participation process needs to sufficiently represent the different perspectives, interests, and knowledge in the food system (Reed et al., 2009). According to Hebinck et al. (2018), the governance context and social dynamics, along with the method, determine the success of a foresight exercise. The challenge of legitimacy lies in bringing together people who represent all possible interests (Hebinck and Page, 2017, Polk and Knutsson, 2008). Also, dealing consciously with the built-up agency in the exercise is a crucial aspect. Marginalized groups need to be involved (Reed et al., 2009), and participants need to be treated equally through equal access to the discussion, so that certain dominant groups do not gain more power than others (Hunsberger and Kenyon, 2006, Moragues-Faus et al., 2024).

Galli et al. (2017) mention how participatory scenario exercises can be useful to examine existing power relations in the socio-technical food system and their limitations. Futuring offers an opportunity to transcend contemporary differences and discuss futures that can potentially be different from the current scene by critically considering current power dynamics (Moallemi et al., 2023, Rutting et al., 2022, Vervoort et al., 2015).

Greater use of participatory foresight will be key to our capacity to mobilize for sustainable food futures (Pereira et al., 2020). However, the necessary quality is often not guaranteed due to insufficient time and resources invested in the design of participation (Hebinck and Page, 2017, Reed et al., 2009). The participatory design must therefore be thoroughly considered to meet the transformative condition in food systems (Hebinck et al., 2018, Hebinck and Page, 2017, Vervoort et al., 2022). It is important that "those who hold a stake" are invited to the table (Hebinck and Page, 2017). However, it is unclear what that 'stake' is, what forms it can take, and which food actors thus should be participating (Hebinck and Page, 2017, Polk and Knutsson, 2008). The aim of this paper is to conduct an exploratory study on participation in the urban food context by examining how such exercises approach participation and which participants are selected.

This paper examines how participatory foresight processes contribute to the transition to sustainable urban food systems, with a focus on the role of participation. The study uses a literature review to compare different participatory foresight processes in urban food systems, with special attention to the involvement of diverse food system actors. An inductive study will follow, attempting to answer the following questions: Which food system actors are involved in the participatory process? And what role are they assigned?

Methodology

A Rapid Evidence Assessment of case studies is conducted to draw inspiration and investigate how foresight cases dealing with urban food systems approach the aspect of participation. The PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analysis) guidelines were followed during the papers' assessment (Figure 1). A list of articles was defined by examining the databases Scopus and Web of Science for participatory foresight processes specifically related to the topic of urban food systems. Papers in all languages and from all geographic regions were considered. All papers were screened by title and abstract for relevance to the subject, specifically whether there is a participatory foresight process discussing broader food system topics, preferably within an urban context. The following search string was used to identify 147 papers: "participatory" AND ("foresight" or "futures" OR "scenarios") AND "food" AND ("urban" OR "city"). As the objective of this paper is not to conduct an exhaustive scientific literature review but rather to provide an indication of various comparable cases with a sufficient amount of information on participation, 6 grey literature cases were included, as well.

Articles that were not excluded during the initial screening were read in detail. Specifically, the following criteria were applied to the papers to be included in the research process: methodology, practice and location. A process of collectively creating future scenarios should be applied as the method, where the practice should be a food systems approach. Lastly, cities or urban areas should be the location of the process. By using an iterative, inductive method, the presence of participants in the foresight process was studied and noted, along with any additional information about their roles in the process.
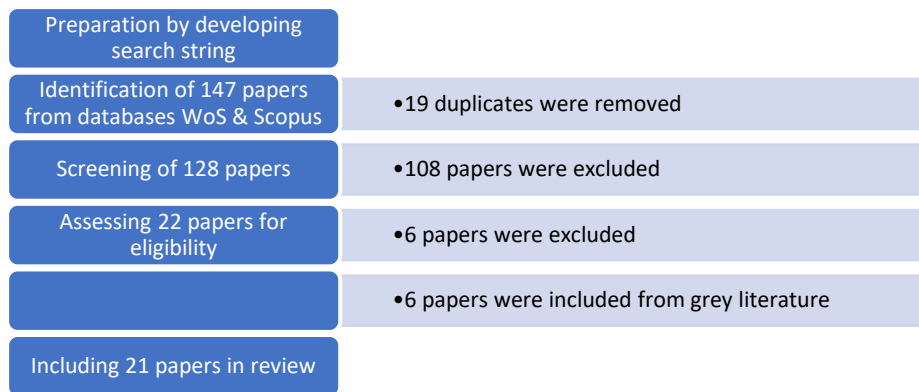
Figure 1: PRISMA flow diagram showing the methodology of the literature review study (adapted from Neuhoff et al., 2023)

Results

The following describes the results for the research question: 'Who participates in foresight exercises in urban food systems – context?'. In total, 21 foresight cases were found relevant for analysis. Despite the potential arguments for demographic and socio-economic diversity, this paper aims to focus on some characteristics that are typical and exclusively present in the discussed cases of participatory foresight processes conducted in the context of urban food systems. The results are described using 4 different methods of classification, corresponding to the main roles the participants were assigned to for participation. Below, the different roles are described in terms of the participants that were invited under each role classification.

Role as public, private, or social actors

A classification commonly found in most papers is that of *"stakeholders from various vested interests from public, private, and civil society"* (paper 2). In such cases, participants are often described as stakeholders, representing the interests of sectors such as *"government, business, civil society, and research"* (paper 20). Out of the 21 cases, 17 had a balanced composition of public, private, and social actors. The public roles were usually filled with local or regional government actors or agencies. Private actors were described as entrepreneurs, local business actors, or as actors from the food industry. The social actors resembled NGOs involved in nutrition, poverty, or environmental issues, or social welfare and community organizations. Often, citizens are involved as an additional category, with the aim of further serving social interests. Under this classification, the main role of the actors is to defend a public, social, or private 'interest' in the foresight exercise.

Role in the food system

Some authors aim to involve all "*key actors in the food system*" in their foresight process (Paper 20) and attempt to connect all elements of an urban food system (Paper 1). Since all cases conduct a future-oriented exercise regarding a city's food system, we found it useful to study which food system actors were actually involved. Under this role classification, the participants are considered actors in a food system, where no single role stands alone and all elements are interconnected. According to the classification by Reckinger (2022), food supply chain actors are placed within a system of other food organizations. Table A1 (Appendix A) gives an overview of the number of papers that involved various food system actors in their foresight process. In this table, the actors are first described as outlined by Reckinger (2022), followed by how they are referred to by the authors.

When looking at the participation of actors in foresight exercises in the context of urban food systems, there is a great variety of professions and types of actors involved. Within the food

supply chain, certain actors are invited more than others, indicating a need to include categories such as waste, logistics, and others that play a significant role in the urban system. Notably, there is no full representation of all 'core food supply actors' in any case. Additionally, there is a notable presence of alternative models that transcend traditional classifications. Beyond the core sectors, a variety of actors are invited, with most falling under public or social actors categories. Citizens are invited in half of the cases and can be seen both as political actors and for their cultural values linked to food. Researchers are often involved in the foresight processes, where their role can vary from participating in the process as 'academic participants' to taking on a facilitating role. Despite the many ways in which food is depicted through media and culture in museums, publications, podcasts, and blogs, such actors are rarely, if ever, involved in food foresight exercises. Actors within marketing and advertising, and financial institutions are the least involved in the examined cases. However, in some cases, it was unclear to which category an actor belongs due to the presence of a dual role.

Locality of participants

Based on this role classification, participants are seen as residents of a region and are expected to defend the interests of that region. For example, Paper 5 mentioned choosing their participants "due to their knowledge and involvement with the community", while Paper 6 aimed to reflect "the demographic and socio-economic structure of the local community". In 9 cases, only local partners were invited. In 6 other cases, regional partners were involved, with the aim "reconnect the city with its hinterlands" (paper 6). Finally, 7 cases involved both local, regional, national, and international players in the process. In every case where municipal actors or citizens were involved, they were present as local actors, unlike other actors, where there was often a mix of local and regional involvement.

Role in the transition to a more sustainable food system.

In 11 of the cases, whether subtly or not, a distinction was made between niche and regime actors. Niche actors were more often associated with individual citizens and community organizations, as well as supply actors envisioning alternative food systems, while regime actors were less extensively described due to their established institutional value that dominates nowadays. The role of niche actors was seen as "representatives from different food-related 'seeds' in the region" (Paper 9), often "in order to challenge conventional power structures and modes of thinking and doing" (Paper 16). On the other hand, the role of regime actors was to represent more "powerful actors in the current food system." In 7 of those cases, regime actors were consciously not included in the foresight process, aiming "to challenge top-down, broad-brush perspectives, through a citizen perspective on the future that was rooted in, and reflected, the lived experience and practices of those citizens" (Paper 4).

Discussion

Participation in a foresight process is an extremely important matter and requires careful consideration since the success of the exercise fully depend on it (Hebinck et al., 2018). It reflects a complex issue of deciding who should be involved in discussing the future of a system (Hebinck and Page, 2017, Polk and Knutsson, 2008, Reed et al., 2009). Despite a general preference for diversity in participatory futuring processes (Barendregt et al., 2024), this research shows that based on the different roles the participants might have, less diversity might be opted for. However, these results do not aim to undermine the diversity that is much needed in factors such as class, gender, race and ethnicity (Neuhoff et al., 2023). This research highlights four roles partners involved in urban food systems foresight processes might have. These roles might be to 1) bring in public, private and civil society interests, 2) act as professionals in the urban food system, 3) act in the interests of the regional scale one might operate in, or 4) play a role in transitioning to a more sustainable food system.

The results indicate that generally, a balance between public, private, and civil society actors is maintained in urban food systems foresight processes. Public interests are typically brought in by involving governance actors, who play a crucial role in anchoring the obtained results in policy measures. Hebinck et al. (2018) emphasize the need to ensure the actual implementation of the results. Cases that fail to do this might risk creating futures that are not effectively translated into policy. The promotion of private interests is fulfilled by actors from business sectors or the food industry, while civil society organizations guarantee the social interests.

Foresight processes typically involve various professional actors from the food system, with a disproportionate distribution in which professions are involved. If the goal is to truly engage the food value chain in the participatory process, as some papers suggest, it can be argued that multiple actors within this core food system need to be involved to align with actual practices. Additionally, certain players such as (alternative) distributors and the horeca sector play significant roles in achieving a more sustainable food system in cities, but are often overlooked (Meybeck and Redfern, 2016, Petruzzelli et al., 2023, Redlingshofer et al., 2020). Only by involving all actors from the food system can the most significant shared uncertainties be identified and addressed to facilitate a complete transition to sustainability. It was challenging to categorize participants under a single category of the food system, highlighting the duality of people's participation in food foresight processes (Barendregt et al., 2024). Relatedly, individual values and experiences are often not considered in the design of participation processes, despite their potential impact on the process (Barendregt et al., 2024). It remains unclear to what extent stakeholders genuinely express the interests of their organization or profession and at which point they involve their own values and experiences. By specifying the expected role of participants during the exercise, many uncertainties can be avoided (Barendregt et al., 2024).

In half of the cases, local citizens are involved, who may participate as consumer who consciously choose to grow, buy, eat, and prepare certain food products, thereby performing a political act (Reckinger et al., 2022, Stolle et al., 2005). On the other hand, citizens might act as local, community-based actors with a niche role, being part of the innovative struggle against top-down decisions and aiming to disrupt the current dominant regime. The choice to involve only local actors aims to leave the future issues to those who are truly concerned. Alternatively, involving a diversity of regional levels can have positive effects in an attempt to connect the city with the surrounding hinterlands. Depending on the predetermined goal, different approaches may be chosen. The same reasoning applies to niche and regime actors, with niche actors being more often associated with citizen individuals and community organizations, as well as supply actors envisioning alternative food systems, while regime actors were less extensively described due to their established institutional value that is dominant nowadays. This division reflects the power dynamics typical of participatory processes and should therefore be taken into account to ensure an inclusive and open process (Galli et al., 2017, Hunsberger and Kenyon, 2006).

This paper attempted to provide an overview of the actors involved in foresight processes within urban food systems, aiming to offer input on how participation in futuring processes can be approached. However, foresight is truly successful when the predetermined goal of knowledge creation, networking, and/or policy impact is achieved in collaboration with the participating stakeholders (Bourgeois, 2012). Although linking participation to the success of foresight was not within the objectives of this paper, it does highlight the interesting insights such a study would provide.

Conclusion

This paper's results show that in participatory foresight processes concerning the future of urban food systems, there is no single way to select participants. Depending on the role assigned to participants beforehand, different balanced or unbalanced participation teams can be formed. These roles might be to 1) bring in public, private and civil society interests, 2) act as professionals in the urban food system, 3) act in the interests of the regional scale one might operate in, or 4) play a role in transitioning to a more sustainable food system. On one hand, foresight practitioners aim to involve a specific target audience, which is often the case with citizen-driven, locally-based processes or niche-based processes. On the other hand, diversity is highly valued, with an aim to achieve equal proportions of public, private, and social actors, or to obtain a balance of food supply actors.

Bibliography

Barendregt, L., Bendor, R., Van Eekelen, B.F., 2024. Public participation in futuring: A systematic literature review. Futures 158, 103346. https://doi.org/10.1016/j.futures.2024.103346

Black, D., Wei, T., Eaton, E., Hunt, A., Carey, J., Schmutz, U., He, B., Roderick, I., 2023. Testing Food Waste Reduction Targets: Integrating Transition Scenarios with Macro-Valuation in an Urban Living Lab. SUSTAINABILITY 15. https://doi.org/10.3390/su15076004

Bourgeois, R., 2012. Part 1- Foresight Report to GCARD II - September, 2012.

Bourgeois, R., Penunia, E., Bisht, S., Boruk, D., 2017. Foresight for all: Co-elaborative scenario building and empowerment. TECHNOLOGICAL FORECASTING AND SOCIAL CHANGE 124, 178–188. https://doi.org/10.1016/j.techfore.2017.04.018

Bourgeois, R., Sette, C., 2017. The state of foresight in food and agriculture: Challenges for impact and participation. Futures 93, 115–131. https://doi.org/10.1016/j.futures.2017.05.004

Calay, V., Claisse, F., Guyot, J.-L., Ritondo, R., 2022. Qu'est-ce que la prospective ?

Dator, J., 2002. Advancing studies. Futures Studies in Higher Education. Praeger, Westport, Conn.

Duncan, J., Claeys, P., 2018. Politicizing food security governance through participation: opportunities and opposition. Food Sec. 10, 1411–1424. https://doi.org/10.1007/s12571-018-0852-x

Fransolet, A., 2022. La prospective pour connaître et gouverner le problème climatique: le cas des scénarios bas-carbone.

Galli, F., Arcuri, S., Bartolini, F., Vervoort, J., Brunori, G., 2017. Exploring scenario guided pathways for food assistance in Tuscany. Bio-based and Applied Economics 237-266 Pages. https://doi.org/10.13128/BAE-18520

Gernert, M., El Bilali, H., Strassner, C., 2018. Grassroots Initiatives as Sustainability Transition Pioneers: Implications and Lessons for Urban Food Systems. Urban Science 2, 23. https://doi.org/10.3390/urbansci2010023

Hebinck, A., Page, D., 2017. Processes of Participation in the Development of Urban Food Strategies: A Comparative Assessment of Exeter and Eindhoven. Sustainability 9, 931. https://doi.org/10.3390/su9060931

Hebinck, A., Selomane, O., Veen, E., De Vrieze, A., Hasnain, S., Sellberg, M., Sovová, L., Thompson, K., Vervoort, J., Wood, A., 2021. Exploring the transformative potential of urban food. npj Urban Sustain 1, 38. https://doi.org/10.1038/s42949-021-00041-x

Hebinck, A., Vervoort, J.M., Hebinck, P., Rutting, L., Galli, F., 2018. Imagining transformative futures: participatory foresight for food systems change. E&S 23, art16. https://doi.org/10.5751/ES-10054-230216

Hunsberger, C., Kenyon, W., 2006. How to better represent different values in participatory approaches: A conference perspective.

Ilieva, R.T., 2017. Urban Food Systems Strategies: A Promising Tool for Implementing the SDGs in Practice †. Sustainability 9, 1707. https://doi.org/10.3390/su9101707

Johnson, K.A., Dana, G., Jordan, N.R., Draeger, K.J., Kapuscinski, A., Olabisi, L.K.S., Reich, P.B., 2012. Using Participatory Scenarios to Stimulate Social Learning for Collaborative Sustainable Development. Ecology and Society 17.

Keenan, M., Popper, R., 2008. Comparing foresight "style" in six world regions. Foresight 10, 16–38. https://doi.org/10.1108/14636680810918568

Meybeck, A., Redfern, S. (Eds.), 2016. Sustainable value chains for sustainable food systems: a workshop of the FAO/UNEP Programme on Sustainable Food Systems: Rome, 8 - 9 June 2016. Presented at the Sustainable Value Chains for Sustainable Food Systems, Food and Agriculture Organization of the United Nations, Rome.

Milan Urban Food Policy Pact, 2015.

Moallemi, E.A., Zare, F., Hebinck, A., Szetey, K., Molina-Perez, E., Zyngier, R.L., Hadjikakou, M., Kwakkel, J., Haasnoot, M., Miller, K.K., Groves, D.G., Leith, P., Bryan, B.A., 2023. Knowledge co-production for decision-making in human-natural systems under uncertainty. Global Environmental Change 82, 102727. https://doi.org/10.1016/j.gloenvcha.2023.102727

Moragues-Faus, A., Clark, J.K., Battersby, J., Davies, A.R., 2024. The potential of urban food governance to transform lives, cities, and the planet. Global Food Security 40, 100751. https://doi.org/10.1016/j.gfs.2024.100751

Neuhoff, R., Simeone, L., Laursen, L.H., 2023. Forms of participatory futuring for urban sustainability: A systematic review. Futures 154, 103268. https://doi.org/10.1016/j.futures.2023.103268

Pereira, L., Sitas, N., Ravera, F., Jimenez-Aceituno, A., Merrie, A., 2019. Building capacities for transformative change towards sustainability: Imagination in Intergovernmental Science-Policy Scenario Processes. Elementa: Science of the Anthropocene 7, 35. https://doi.org/10.1525/elementa.374

Pereira, L.M., Davies, K.K., Den Belder, E., Ferrier, S., Karlsson-Vinkhuyzen, S., Kim, H., Kuiper, J.J., Okayasu, S., Palomo, M.G., Pereira, H.M., Peterson, G., Sathyapalan, J., Schoolenberg, M., Alkemade, R., Carvalho Ribeiro, S., Greenaway, A., Hauck, J., King, N., Lazarova, T., Ravera, F., Chettri, N., Cheung, W.W.L., Hendriks, R.J.J., Kolomytsev, G., Leadley, P., Metzger, J., Ninan, K.N., Pichs, R., Popp, A., Rondinini, C., Rosa, I., Van Vuuren, D., Lundquist, C.J., 2020. Developing multiscale and integrative nature–people scenarios using the Nature Futures Framework. People and Nature 2, 1172–1195. https://doi.org/10.1002/pan3.10146

Petruzzelli, M., Ihle, R., Colitti, S., Vittuari, M., 2023. The role of short food supply chains in advancing the global agenda for sustainable food systems transitions. Cities 141, 104496. https://doi.org/10.1016/j.cities.2023.104496

Polk, M., Knutsson, P., 2008. Participation, value rationality and mutual learning in transdisciplinary knowledge production for sustainable development. Environmental Education Research 14, 643–653. https://doi.org/10.1080/13504620802464841

Ramírez, R., Wilkinson, A., 2016. Strategic Reframing. The Oxford Scenario Planning Approach. Oxford University Press.

Reckinger, R., Kapgen, D., Korjonen, M.H., Margue, S., 2022. An infographic synopsis of Luxembourg's Food System.

Redlingshofer, B., Traversac, J.B., Messmer, J.G., Aubry, C., n.d. Multi-actor organization for urban food systems: short but collaborative supply chains.

Reed, M.S., Graves, A., Dandy, N., Posthumus, H., Hubacek, K., Morris, J., Prell, C., Quinn, C.H., Stringer, L.C., 2009. Who's in and why? A typology of stakeholder analysis methods for natural resource management. Journal of Environmental Management 90, 1933–1949. https://doi.org/10.1016/j.jenvman.2009.01.001

Rittel, H.W.J., Webber, M.M., 1973. Dilemmas in a General Theory of Planning. Policy Sciences 4, 155–169.

Rohrbeck, R., Battistella, C., Huizingh, E., 2015. Corporate foresight: An emerging field with a rich tradition. Technological Forecasting and Social Change 101, 1–9. https://doi.org/10.1016/j.techfore.2015.11.002

Rutting, L., Vervoort, J., Mees, H., Driessen, P., 2022. Strengthening foresight for governance of social-ecological systems: An interdisciplinary perspective. Futures 141, 102988. https://doi.org/10.1016/j.futures.2022.102988

Schwarz, J.O., 2023. Strategic Foresight: an introductory guide to practice. Routledge.

Stolle, D., Hooghe, M., Micheletti, M., 2005. Politics in the Supermarket: Political Consumerism as a Form of Political Participation. International Political Science Review 26, 245–269. https://doi.org/10.1177/0192512105053784

Vervoort, J., Bendor, R., Kelliher, A., Strik, O., Helfgott, A., 2015. Scenarios and the art of worldmaking. Futures 74. https://doi.org/10.1016/j.futures.2015.08.009

Vervoort, J., Mangnus, A., McGreevy, S., Ota, K., Thompson, K., Rupprecht, C., Tamura, N., Moossdorff, C., Spiegelberg, M., Kobayashi, M., 2022. Unlocking the potential of gaming for anticipatory governance. EARTH SYSTEM GOVERNANCE 11. https://doi.org/10.1016/j.esg.2021.100130

Appendix A

Food system actors	Label used in the papers	# papers
Pre-farming input supply	*Agrobusiness (input)*	1
Farming	*Farmer, urban farmer, organic farmer, grower, farmer-processing, farmer association, production*	8
Process	*Food processor, food business, farmer-processing*	7
Wholesale	*Wholesale supermarket*	1
Retail	*Retail, online grocery store, retail chain, farmer market, cooperative*	8
Food services & eateries	*Consumption, chef/bakery, kitchen/catering social enterprise*	2
Individual citizens (eaters)	*Citizen-consumer, community member, community gardeners, engaged citizens*	10
Waste	*Waste management, international waste management company*	2
Logistics	*Transportation authority, distribution, alternative distribution*	3
Natural environment	*Nature-based ecosystem services,*	1
Other	*Urban food initiatives, alternative food networks, farmer-consumer cooperative, online meeting platform*	10
Operational services	*Nutritionist, food consultancy, public health, mental health, design studio, landscape architect, product designer, housing corporation*	10
Education, training, awareness raising	*Education, vocational training, students, nature and environment education*	6
Business interests & professional corporations	*Business interests, entrepreneur, small and medium enterprises, local entrepreneur*	7
Non-profit, voluntary and community groups	*Community centres, social welfare organisation, civil society, not-for-profit enterprises, NGO, charity, community foundation, development agencies*	17
Research	*University, researcher, academia*	13
Governance and regulations	*Municipality, city official, local government, regional government, federal administration, government department, international agencies*	18
Finance, Investments and insurance	*Bank, trading corporation, resources for entrepreneurs*	2
Marketing and advertising		0
Media & culture	*Filmmaker, tourism, religious organisation, library employees, food writer, journalist*	5
Individual citizens (values)	*Citizen-consumer, community member, community gardeners, engaged citizens, local action group, activism*	11

Table A1: Overview of participating actors in the food system, according to Reckinger's (2022) classification (column 1), as described in the examined papers (column 2), along with the corresponding number of papers that include those participants (column 3). The gray shaded part encompasses the core food supply actors.

Appendix B

Papers	References in Harvard style
paper 1	Black, D. *et al.* (2023) 'Testing Food Waste Reduction Targets: Integrating Transition Scenarios with Macro-Valuation in an Urban Living Lab', *SUSTAINABILITY*, 15(7). Available at: https://doi.org/10.3390/su15076004.
paper 2	Heitlinger, S. *et al.* (2019) 'Co-creating "smart" sustainable food futures with urban food growers', in. *ACM International Conference Proceeding Series*, pp. 114–120. Available at: https://doi.org/10.1145/3328320.3328399.
paper 3	Newell, R., Picketts, I. and Dale, A. (2020) 'Community systems models and development scenarios for integrated planning: Lessons learned from a participatory approach', *Community Development*, 51(3), pp. 261–282. Available at: https://doi.org/10.1080/15575330.2020.1772334.
paper 4	Arciniegas, G. *et al.* (2022) 'A participatory tool for assessing land footprint in city-region food systems-A case study from Metropolitan Copenhagen', *FRONTIERS IN SUSTAINABLE FOOD SYSTEMS*, 6. Available at: https://doi.org/10.3389/fsufs.2022.846869.
paper 5	Brons, A. *et al.* (2022) 'A tale of two labs: Rethinking urban living labs for advancing citizen engagement in food system transformations', *Cities*, 123. Available at: https://doi.org/10.1016/j.cities.2021.103552.
paper 6	Dankel, D.J. *et al.* (2020) 'The Melting Snowball Effect: A Heuristic for Sustainable Arctic Governance Under Climate Change', *Frontiers in Marine Science*, 7, p. 537. Available at: https://doi.org/10.3389/fmars.2020.00537.
paper 7	Sellberg, M.M. *et al.* (2020) 'Using local initiatives to envision sustainable and resilient food systems in the Stockholm city-region', *Global Food Security*, 24, p. 100334. Available at: https://doi.org/10.1016/j.gfs.2019.100334.
paper 8	Adeosun, K.P., Greene, M. and Oosterveer, P. (2023) 'Practitioners' perspectives on improving ready-to-eat food vending in urban Nigeria: a practice-based visioning and back-casting approach', *Frontiers in Sustainable Food Systems*, 7. Available at: https://doi.org/10.3389/fsufs.2023.1160156.
paper 9	Hodbod, J. *et al.* (2024) 'From Theory to Transdisciplinary Practice: Community-Based Resilience Visioning in Urban Agriculture', *Society and Natural Resources*, 37(1), pp. 143–167. Available at: https://doi.org/10.1080/08941920.2023.2228264.
paper 10	Stafseng, V.E., Nicolaysen, A.M. and Lieblein, G. (2024) 'Key Characteristics of Co-produced Urban Agriculture Visions in Oslo', in *GeoJournal Library*, pp. 175–198. Available at: https://doi.org/10.1007/978-3-031-41550-0_8.
paper 11	Manderscheid, M. *et al.* (2022) 'Let's Do It Online?! Challenges and Lessons for Inclusive Virtual Participation', *Frontiers in Sustainable Food Systems*, 6. Available at: https://doi.org/10.3389/fsufs.2022.732943.
paper 12	Lardon, S. *et al.* (2016) 'Participative prospective in the Pisa urban area (Italy): Water and food production as issues for territorial development', *Cahiers de Geographie du Quebec*, 60(170), pp. 265–286. Available at: https://doi.org/10.7202/1040535ar.
paper 13	Dijkshoorn-Dekker, M. *et al.* (2020) 'Food secure metropolitan areas: The transition support system approach', *Sustainability (Switzerland)*, 12(13). Available at: https://doi.org/10.3390/su12135376.
paper 14	Cox, V. *et al.* (2014) 'Beyond Design and Participation: The "Thought for Food" Project in Flanders, Belgium', *Journal of Urban Design*, 19(4), pp. 412–435. Available at: https://doi.org/10.1080/13574809.2014.923742.
paper 15	Wentworth, C. *et al.* (no date) 'SCENARIOS FOR THE FUTURE OF THE FLINT FOOD SYSTEM: VISIONS FOR 2042'.
paper 16	Sakai, P. *et al.* (2020) 'Growing a resilient food system in Leeds'. Available at: https://doi.org/10.5518/100/62.

paper 17	Smith, K. (2022) 'Fair Food Futures. Future scenarios for Food Justice and Zero Hunger in Australia: A synthesis for policy action'.
paper 18	*Report Dhaka Systems project*. Wageningen: Wageningen Centre for Development Innovation. Available at: https://doi.org/10.18174/573275.
paper 19	Fiala, V. and Jacob, K. (2024) 'Combining the multi-level perspective framework with participatory scenario development to explore the many facets of food system transitions in Germany', *Sustainability Science* [Preprint]. Available at: https://doi.org/10.1007/s11625-024-01505-6.

Table B1: List of papers in corpus.

PAPER SESSION 2.B
MOVEMENT BUILDING ACROSS THE FOOD SYSTEM

Addressing the role and policy needs of Agroecolgy-Oriented Farmers Groups in transforming food systems

— LÓPEZ-GARCÍA Daniel
— CARRASCOSA-GARCÍA María

Addressing the role and policy needs of Agroecolgy-Oriented Farmers Groups in transforming agro-food systems

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The efforts of agroecology-oriented farmers and peasants' organizations have been studied in depth in relation to their political expression in global governance processes and spaces, but less so with regard to the forms they adopt to strengthen the socio-economic viability of small- and medium-sized farms within sustainable food systems, and their policy needs at national levels or below. Whilst farmers' self-organization represents a core process in the development of Agroecology-based Local Agri-food Systems (ALAS), the development of collective, economic and political structures among agroecology-oriented farmers' is still weak in the local scales. In an attempt to understand why and how agroecology-oriented farmers are constructing their own position within ALAS, and the challenges they are facing in this sense, we conducted a qualitative study on the self-organizational processes and structures of five Agroecology-Oriented Farmers' Groups in Spain. Based on 27 interviews in 5 local associations linked to urban food policy co-production in Spain; and six online, participatory workshops, our results reveal different reasons for joining and setting up farmers' groups as non-mixed collective spaces, with instrumental and social factors constituting the principal motivations. The main challenges identified refer to the precariousness and isolation of farmers, as well as of the different local groups. Our results also highlight the need to strengthen agroecology-oriented farmers' associations, and to promote greater coordination and coherence between agricultural policies (usually supra-municipal) and food policies (usually municipal). There is also a need to orient public resources towards the promotion of specifically agroecological models of food production and local markets - *agroecology mainstreaming* into agro-food policies - in order for these to actually benefit agroecological initiatives. The weakness of the Agroecology-Oriented Farmers' Groups highlights the need for further action-oriented research and accompaniment.

Keywords: farmers' cooperatives, agroecology scaling, agro-food policies, sustainable food systems; Participatory Action-Research

Introduction and analytical background

Agroecological research has undergone a major change in recent years, with the scale of analysis being extended to food systems, and with a sharper focus on social and economic aspects (Mason et al. 2021). The scaling-up of agroecological transitions at food system level involves the material and economic dimensions, which presupposes the reorganization of production flows (Gliessman 2016:188). Focusing upon Europe's food systems, we can differentiate two kinds of collective actors to explore the political agency of the farming sector. The first group would be represented by traditional, conventional farmers' unions and farmers' cooperatives that are generally oriented towards global commodity markets and intensification practices (Gray 2014; Ajates 2020). The second group is represented by the food sovereignty movement. It has developed strong socio-political organizations and alliances with urban food movements, useful for advocating around food sovereignty and peasants' rights, both at the local and global levels (Holt-Gimenez and Shattuck 2011; Giraldo and Rosset 2018). However, they fail to attract the majority of conventional farmers towards transitions to sustainability (Shattuck et al. 2015; Mamonova et al. 2020).

While farmers and peasant communities are recognized by some to constitute the protagonists of the agroecological transitions (Val et al. 2019), and more especially regarding

their collective structures and agency (Marsden et al. 2018), research on agroecology-oriented farmers and the specific collective structures they are creating is still scarce (Ajates 2020; López-García and González de Molina 2021; Groot-Kormelinck et al. 2022). Likewise, research on agro-food policies often disregard sustainable or organic farming (López-García et al. 2020; Doernberg et al. 2019) or propose policy approaches for promoting agroecology which have been deeply criticised (Ajates et al. 2018; Giraldo and McCune 2019). Lack of support and inconsistencies between agricultural and (sustainable and healthy) food policies remain core obstacles for deploying holistic sustainability approaches to food systems beyond isolated experiencies and city boundaries (IPES-Food 2017; López-García et al. 2024).

Methods

The present chapter was conducted as Participatory Action-Research (PAR). Together with representatives of five groups of agroecology-oriented (organic farming, local markets) farmers in Spain, three activities were developed: (1) a self-diagnosis performed by each association through 5-7 interviews and a participative workshop in each one, to discuss preliminary outcomes of the local interviews (overall 27 interviews); (2) five local advocacy meetings between representatives of the producers' associations and local decision makers with responsibilities in food policies in the respective Town Councils, in order to test diagnosis and early stage proposals; and (3) two participatory, online workshops bringing together farmers and technical staff from all associations to discuss (a) the outputs of the five local diagnoses and (b) the common needs for food policies at municipal, regional, and national levels of administrative responsibilities and powers.

Results and discussion

The most common profiles within the sample of interviewees fall within the category of what is known as the 'agroecological farmer' (Deaconu et al. 2021), and even the 'proto-agroecological farmer' (Ploeg et al 2019). They include certified organic farmers' and other whose strategies are based on the reduction and re-localisation of external inputs. The groups' members are much younger and show a higher proportion of women and neorrural than average farmers in the EU (Sutherland 2023). The interiewees showed to be highly implicated in different collective structures, mixed or non-mixed with other food systems' actors. These are considered to be complementary among each other. The AOFGs they are creating constitute incipient structures intended to create the economic and social viability of the individual initiatives they comprise. To this end, they have oriented the provision of local and organic food towards local markets , and in this sense they are important promoters of agroecological transitions at local levels (González de Molina and López-García 2021). Additionally, they are involved (and are one of the main promoters) in the development of local, sustainable food policies in different Spanish territories (López-García and González de Molina 2020). The spatial proximity between its members is crucial for AOFGs, as their main aims are material -joint marketing and distribution activities in local markets. The close relationship between AOFGs and local administrations can also be seen as place-based, as a way of territorialised governance.

AOFGs show a high internal diversity of organizational forms. Such a diversity reflects differences in the general objectives of each entity, in the profiles of the farmers that make

them up, as well as in their adaptation to different geographical, economic and socio-political contexts. However, we can identify important efforts intended to maintain the involvement and leadership of farmers within each AOFGs, what reflects a big difference with respect to the managerialist drift adopted by the Agricultural Cooperatives, or the third party management and purely commercial objectives of the experiences most cited for Food Hubs. The explicit aims to keep control under farmers' decision defines the internal functioning of AOFGs, for example regarding their non-mixed character (they are composed only by farmers) that limits the internal heterogeneity and thus avoid potential conflicts, the limited number of members in some cases, or the adoption of time-consuming models of internal governance, such as assemblies. However, these entities comprise people overburdened with work in often-precarious productive initiatives, with little time for collective action and little knowledge of, or skills in, the agro-food policies that ultimately condition their economic activity. Although they all bring together agroecology-oriented farmers, the weakness and fragility that their members perceive in the collective structures they belong could also explain the diversity of models deployed. This reflects the search for organizational ways to survive in a context that does not support them, but rather rejects agroecological innovations, pushing towards conventionalization (González de Molina 2020).

In many cases, advocacy activities towards urban administration constitute a secondary activity of AOFGs. The misrepresentation of agroecology-oriented farmers' in National-wide farmers' unions, linked to the weak capacity of AOFGs to participate in food governance spaces (such as Urban Food Policy Councils) and advocacy activities, represent an actual lack of representation of such farmers in the spaces where decisions on agro-food policies are taken. Such an absence represent a strong weakness for transitions to sustainability at food systems scale (Marsden et al. 2018; González de Molina 2020). A significant part of agroecology-oriented farmers see Local Authorities as to be more accessible to pay attention to their needs, although they don't have competencies in agricultural policies (López-García et al. 2024). Such a paradoxical position seem coherent with the positions of mistrust within grassroots food movements towards the State, that appears beside the need for political environments enabling agroecological transitions (Giraldo and McCune 2019; López-García et al. 2024). But, instead of paralising farmers' advocacy, such a paradox represent a core reason for farmers to keep on fighting to gain public support for food systems' agroecological transitions (agroecology upscaling), and at the same time promoting agroecological experiences, which are to be the main strength of the transition (Fergusson et al. 2019). This is the way they try to overcome the 'systemic rejection effect' from the corporate food regime towards agroecological experiences (González de Molina 2020).

In an attempt to promote integral transitions towards sustainability in agro-food systems, AOFGs are demanding a mainstreaming of agroecology in agro-food policies, at least in two ways. On one hand, interventions have been proposed in within different scopes of politics at the municipal scale, to address the 'horizontal' -or thematic- perspective of urban food policies (Moragues-Faus et al 2013) and of agricultural policies at the regional and national scales (Sabourin et al. 2017). On the other hand, interventions are being called for to encompass the different levels of public policies, together with the articulation of agricultural and food policies (addressing both upstream and downstream activities, in rural and urban territories) and to develop multilevel governance actions addressing the holistic approach provided by agroecology (López-García et al. 2024). Rather than innovative actions, the farmer's are calling for holistic action aimed at applying the agroecological perspective to the different scopes and levels of agricultural and food policies (IPES-Food 2017; Doernberg et

al. 2019. Emerging examples merging both food and agricultural policy approaches can be found incipiently in rural and peri-urban settings, such as e.g. Local Agroecological Dynamisation in Spain, Territorial Food Projects in France, or Biodistricts in Italy (Passaro and Randelli 2022). Agroecology-oriented farmers are calling for a radical change in the approach of both agricultural and food policies in order to facilitate sustainability transitions in the food system; we could call this 'Agroecology mainstreaming'.

Several proposals put forward by the agroecology-oriented farmers specifically highlight the need to adapt laws, regulations, subsidies, etc. to overcome the 'rejection effect' towards agroecological experiences (González de Molina 2020), thus enabling agroecology-oriented farming systems (organic, local, diversified). But agroecology can also be mainstreamed to other policy levels, e.g. to the field of training, extension and AKIS, the calculation of the Annual Work Units employed to assign certain subsidies –e.g. the first installation of young farmers– which are currently pressuring to raise the economic dimension of farms (Sutherland 2023), or even the direct payments of pillar I of the CAP, considered as payments for ecosystemic services. In an attempt to facilitate support with public funds and resources for agroecology-oriented initiatives, these resources should be administered in a coordinated and harmonious manner between different public bodies and administrative levels, in order to be successful (IPES-Food 2017; López-García et al. 2024).

Finally, the impotence observed among the agroecology-oriented farmers' interviewed can be seen in their demand for support for developing agency as a collective, socio-political subject. This institutionalization process emerges as a necessary step for further participation of farmers in governance processes and decision making spaces (Lamine et al. 2022), but also with regard to their role in the scaling of agroecological initiatives towards ALAS (González de Molina et al. 2019). The discourses gathered from interviewees highlight the need to develop non-mixed, dedicated spaces for farmers to develop their own organisations and visions on the World. Gender inequalities inside farmers' groups themselves suggest the need for a second level of non-mixed, empowering spaces of women farmers (Khadse 2017). Such a need of non-mixed spaces might be consistent with the literature arguing the need to strengthen plural subjects to promote transitions (Holt-Gimenez and Shattuck 2011). A careful treatment of (shared) social protagonism of farmers to lead agroecological transitions should thus be considered when approaching the study of such plural, social subjects (López-García and González de Molina 2021).

Conclusions

Agroecology-oriented farmers are creating their own collective economic structures to give response to the growing demand of local and sustainable food in Global North's societies. The structures analysed here are non-mixed (composed exclusively by farmers), limited in their number of members, and oriented to local markets. And very often such structures are also a platform for advocacy activities. They are thus different from other collective structures of farmers, such as PGSs, Food Hubs or Agricultural Cooperatives, although in many cases not only the memberships are mutual, but also the objectives. The key factor that differentiates these new institutions in the agrcultural sector is to keep the control of their marketing and advocacy structures. The discourses of agroecology-oriented farmers highlight the contradictions between the objectives of food policies at different levels and the way in which both agricultural and urban food policies are implemented. Thus, the demands of the agroecology-oriented farmers refer to a twofold political action: on one hand, decisive support for agroecological experiences and strengthening of the role they play within the

spaces of agro-food governance and policy making; on the other, a generalized shift towards agroecology in the current approach of agricultural and urban food policies, which we have termed 'agroecology mainstreaming'.

Nonetheless, this perspective is not free of conflicts, such as the very weakness of the agroecology-oriented farming sector in Global north, or the structural nature of the 'rejection effect' towards these initiatives by the corporate food regime, what includes different dimensions of the agricultural administrations, among others. Advances in the construction of comprehensive, multi-level frameworks of sustainable agro-food policies therefore face a major challenge along the development of empirical knowledge on how to address power and agency imbalances within co-production processes of agro-food policies. A prior understanding of how AOFGs develop and adapt to different contexts is also a relevant task in further agroecological research. Action-Oriented Research projects can constitute a useful tool in this sense, as they combine the generation of scientific knowledge, place-based knowledge and the strengthening of these social subjects themselves.

Bibliography (Title 2)

Ajates, R. (2020). An integrated conceptual framework for the study of agricultural cooperatives: from repolitisation to cooperative sustainability, Journal of Rural Studies. https://doi.org/10.1016/j.jrurstud.2020.06.019

Deaconu, A., P.R. Berti, D.C. Cole, G. Mercille and M. Batal. (2021). Agroecology and nutritional health: A comparison of agroecological farmers and their neighbors in the Ecuadorian highlands. Food Policy. https://doi.org/10.1016/j.foodpol.2021.102034

Doernberg, A., Horn, P., Zasada, I. and Piorr, A. (2019). Urban food policies in German city regions: An overview of key players and policy instruments. Food Policy. https://doi.org/10.1016/j.foodpol.2019.101782.

Giraldo, O.F. and Rosset, P.M. (2018). Agroecology as a territory in dispute: Between institutionality and social movements. Journal of Peasant Studies. https://doi.org/10.1080/03066150.2017.1353496

Giraldo, O.F. and McCune, N. (2019). Can the state take agroecology to scale? Public policy experiences in agroecological territorialization from Latin America. Agroecology and Sustainable Food Systems, https://doi.org/10.1080/21683565.2019.1585402

Gliessman, S.R. (2016). Transforming food systems with agroecology. Agroecology and Sustainable Food Systems. https://doi.org/10.1080/21683565.2015.1130765.

Gonzalez de Molina, M. 2020. Strategies for scaling up agroecological experiences in the European Union. International Journal of Agriculture and Natural Resources. https://doi.org/10.7764/ijanr.v47i3.2257

Gray, T. 2014. Agricultural Cooperatives. In: Thompson, P.B., Kaplan, D.M. (eds) Encyclopedia of Food and Agricultural Ethics, 46–54. Springer, Dordrecht. https://doi.org/10.1007/978-94-007-0929-4_203

Groot-Kormelinck, A., J. Bijman, J. Trienekens and L. Klerkx. 2022. Producer organizations as transition intermediaries? Insights from organic and conventional vegetable systems in Uruguay. Agriculture and Human Values 39: 1277–1300. https://doi.org/10.1007/s10460-022-10316-3

Holt Giménez, E. and Shattuck, A. 2011. Food crises, food regimes and food movements: rumblings of reform or tides of transformation? The Journal of Peasant Studies. https://doi.org/10.1080/03066150.2010.538578

IPES-Food. 2017. What makes urban food policy happen? Insights from five case studies. International Panel of Experts on Sustainable Food Systems.

Khadse, A. 2017. Women, agroecology and gender equality. New Delhi: Focus on the Global South.

Mason, R.E., White, A., Bucini, G., Anderzén, J., Méndez, V.E. and Merrill, S.C. (2021). The evolving landscape of agroecological research, Agroecology and Sustainable Food Systems. https://doi.org/10.1080/21683565.2020.1845275

Lamine, C., Schmitt, C., Palm, J., Derbez, F. and Petersen, P. 2022. How policy instruments may favour an articulation between open ended and deterministic perspectives to support agroecological transitions? Insights from a franco-brazilian comparison. In Lamine, C., Magda, D., Rivera-Ferre, M.G. and Marsden, T. (Eds.): Agroecological transitions, between determinist and open-ended visions, 129-152. Bruxelles: Peter Lang.

López-García, D., and González de Molina, M. 2020. Co-Producing Agro-Food Policies for Urban Environments: Toward Agroecology-Based Local Agri-food Systems. In M. Egerer and H. Cohen (Eds.): Urban Agroecology. Interdisciplinary Research and Future Directions, pp. 188-208. Boca Ratón (FL): CRC Press. https://doi.org/10.1201/9780429290992

López-García, D., and González de Molina, M. (2021). An Operational Approach to Agroecology-Based Local Agro-food Systems. Sustainability. https://doi.org/10.3390/su13158443

López-García, D., DiPaula, M. and Cruz-Macein, J.L. (2024). Agro vs. Food? Perceptions of local policymakers on agro-food policies from a multilevel approach. Frontiers in Sustainable Food Systems (in press)

Mamonova, N., Franquesa, J.and Brooks, S. (2020). 'Actually Existing' Right-Wing Populism in Rural Europe : Insights from Eastern Germany, Spain, the United Kingdom and Ukraine. Journal of Peasant Studies 47(7): 1497-1525. https://doi.org/10.1080/03066150.2020.1830767

Marsden, T., Hebinck, P. and Mathijs, E. (2018). Re-building food systems: embedding assemblages, infrastructures and reflexive governance for food systems transformations in Europe. Food Security. https://doi.org/10.1007/s12571-018-0870-8

Moragues, A., Morgan, K., Moschitz, H., Neimane, I., Nilsson, H., Pinto, M., Rohracher, H., Ruiz, R., Thuswald, M., Tisenkopfs, T. and Halliday, J. (2013). Urban food strategies: The rough guide to sustainable food systems sustainable food systems. Document developed in the framework of the FP7 project FOODLINKS (GA No. 265287).

Passaro, A. and Randelli, F., 2022. Spaces of sustainable transformation at territorial level: an analysis of biodistricts and their role for agroecological transitions, Agroecology and Sustainable Food Systems. https://doi.org/10.1080/21683565.2022.2104421

Ploeg, J.D. van der, D. Barjolle, J. Bruil, et al. (2019). The economic potential of agroecology: Empirical evidence from Europe. Journal of Rural Studies. https://doi.org/10.1016/j.jrurstud.2019.09.003

Sabourin, E., Patrouilleau, M.M., Le Coq, J.F., Vásquez, L. and Niederle, P. (Orgs.) (2017). Políticas públicas a favor de la agroecología en América Latina y El Caribe. Porto Alegre: Red Políticas Públicas y Desarrollo Rural en América Latina.

Recanati, F., Maughan, C., Pedrotti, M., Dembska, K., Antonelli, M. 2019. Assessing the role of CAP for more sustainable and healthier food systems in Europe: A literature review. Science of The Total Environment, 653: 908-919, https://doi.org/10.1016/j.scitotenv.2018.10.377

Shattuck, A., C.M. Schiavoni and Z. VanGelder. (2015). Translating the Politics of Food Sovereignty: Digging into Contradictions, Uncovering New Dimensions. Globalizations. https://doi.org/10.1080/14747731.2015.1041243

Sutherland, L.A. (2023). Who do we want our 'new generation' of farmers to be? The need for demographic reform in European agriculture. Agricultural and Food Economics 11(3). https://doi.org/10.1186/s40100-023-00244-z

Val, V., Rosset, P.M., Zamora Lomelí, C., Giraldo, O.F. and Rocheleau, D. (2019). Agroecology and La Via Campesina I. The symbolic and material construction of agroecology through the dispositive of "peasant-to-peasant" processes. Agroecology and Sustainable Food Systems, 43(7-8): 872-894. https://doi.org/10.1080/21683565.2019.1600099

Tackling food poverty! Towards healthy, sustainable and socially just food environments through inclusive participation

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Tackling food poverty! Towards healthy, sustainable, and socially just food environments through inclusive participation

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Citizens living in food poverty can easily get caught up in a vicious cycle. Socioeconomically disadvantaged people often rely on food assistance and are more likely to suffer from diseases caused by unhealthy diets, such as diabetes. They may also experience isolation and lack social networks, as they do not have the financial means to participate in social life. Moreover, this group is often overlooked in decision-making processes regarding healthy and sustainable food environments. To create equitable food environments in urban areas, it is crucial to incorporate the everyday challenges and needs of socioeconomically disadvantaged people. In our collaborative research, we explore the needs of socioeconomically disadvantaged people regarding a healthy and sustainable diet in Switzerland and the Netherlands. The aim is also to develop, in a participatory way, ideas on how to create more socially just and inclusive food environments. Seven workshops with three different groups of 4 to 10 socioeconomically disadvantaged people, complemented with 10 semi-structured interviews, were conducted in Bern (Switzerland). In Almere (the Netherlands), the research included a photo-based study through WhatsApp with 19 participants, seven semi-structured interviews, and two workshops. Preliminary results show that food poverty exists in Bern and Almere, and not only in terms of actual access to food. Food insecurity can be a psychological stressor, affecting mental and physical health and participation in social life, such as not being able to go out to restaurants and meet people outside the home. Our findings suggest that food poverty must be given special consideration when developing urban food strategies and health interventions. Participatory approaches offer a promising pathway towards more socially just food environments. Our participants shared various relevant insights and ideas that we wish to disseminate and valorize. In our presentation, we also intend to reflect on the challenges we experienced in our attempts to reach out to and give a voice to people living in food poverty.

Keywords: food poverty, food environments, social participation, participatory action research

1. Introduction

The lack of socially just access to healthy food affects physical health, although the consequences often occur years later (Feichtinger, 1996; Setznagel, 2020). Citizens living in food poverty are, for example, more likely to be at risk of developing diseases, such as diabetes, due to an unhealthy diet (Waskow, Rehaag, 2011). According to Heindl (2016), our diet also has a psychological dimension; it affects our mental health. People affected by poverty are often in need of food assistance. Organizations providing it regularly offer only limited food choices, and food assistance itself tends to contribute to stigmatization and shame (Andriessen, Van Der Velde, 2024). Feichtinger (1996) noted that food poverty can be divided into material food poverty and social food poverty. *Material food poverty* is defined as a lack of financial means to access sufficient food to combat hunger (Feichtinger, 1996). This also means that it is often not possible to comply with physiological and hygiene standards (Feichtinger, 1996; Setznagel, 2020). *Social food poverty* includes a lack of social networks, a lack of opportunities to take responsibility and to take part in decision-making processes, and a lack of participation in cultural customs and practices and thus in social life (Feichtinger, 1996). According to Vilar-Compte *et al.* (2021, p. 16), urban poverty, in particular, "poses unique and diverse challenges and pathways to food access". The authors (Vilar-Compte *et al.*, 2021) stated that the respective food environment can influence the food consumption behaviour of urban citizens. Therefore, there is a need for research into how we can make food environments in urban areas more socially just.

Everyday food decisions are influenced by many factors. Healthy and sustainable choices tend not to be the most obvious ones. The concept of a *food environment* illustrates the complexity

of food decisions and the variety of influencing factors. Food behaviour is heavily influenced by food environments at home or at work. In the literature, definitions of the concept *food environment* differ widely. Philipsborn *et al.* (2021, p.63) described it as the interplay of different environmental factors influencing individual food practices, such as physical, economic, political, and sociocultural factors. The food environment has also been defined as the interface between the food system and individual eating behaviour (ibid.). Turner *et al.* (2018) described food environments as mediating factors in food acquisition and consumption and, according to the authors, it encompasses external dimensions (e.g. availability, prices, and product properties) and personal dimensions (e.g. accessibility, affordability, and convenience of food sources and products). The Scientific Advisory Board on Agricultural Policy, Food and Consumer Health Protection (2020) highlighted that food environments heavily influence food consumption and eating behaviour and encompass the entire behavioural process, from exposition to consumption, with short-term and long-term effects. The advisory board concluded that the influence of food environments is underestimated, and individuals' action control is overrated in both public and political debate. Furthermore, the Scientific Advisory Board on Agricultural Policy, Food and Consumer Health Protection (2020, p. 7) described food environments as fair if they "are health-promoting and have greater social, ecological and animal-welfare compatibility" and thus help to reduce food poverty.

In our research project, we explore the needs, habits, values, and everyday challenges of socioeconomically disadvantaged people in the urban areas of Bern (Switzerland) and Almere (the Netherlands). Our research questions are as follows:

- What are the needs of socioeconomically disadvantaged people regarding a healthy and sustainable diet in Switzerland and the Netherlands?

- How can we create more socially just and inclusive food environments in a participatory way?

2. Methodology

In Bern, we conducted 10 qualitative expert interviews with socioeconomically disadvantaged people to understand their individual lifeworlds (Gläser, Laudel, 2010). To explore the issue further and to develop concrete actions, we used participatory action research (PAR). PAR connects society and scientists in the research process and thus represents a new and innovative form of knowledge production (Bergold, Thomas, 2012; Unger, 2014). Within PAR, the people being studied are directly involved as co-researchers in as many steps of the research process as possible, for example by co-developing research questions or collecting and analysing data (Chevalier, Buckles, 2019). In this way, concrete actions can be co-developed and initiated in the PAR that meet the needs of researchers and co-researchers and find acceptance on both sides. Within the participatory research process, we conducted seven workshops with three different groups of 4 to 10 socioeconomically disadvantaged people. Recruitment was facilitated through representatives of community organisations and flyers placed on tables in community cafés, for example. In the Bern research team, we discussed whether we should pay the co-researchers, and decided to do so because we wanted to work together as equals. The organization, design, and evaluation of the workshops were carried out as far as possible in a participatory way. The co-researchers sent us, for example, photo diaries from their everyday food life, mapped their food environment, or brought homemade food to a workshop to share. We discussed individual needs, values, food consumption behaviour and challenges, and discussed concrete actions together. We researchers conducted the final evaluation of all the workshops and expert interviews based on the qualitative content analysis according to Mayring (2015). The software MAXQDA helped us structure the topics.

In Almere (the Netherlands), our research comprised a photo-based study conducted via WhatsApp involving 19 participants. Additionally, seven semi-structured interviews were conducted, along with two workshops inspired by the Swiss study design. The WhatsApp study

aimed to understand the dietary habits of financially constrained households. A pilot study involved eight participants sharing daily meal photos and details, followed by a subsequent study with 11 participants. Recruitment was facilitated through municipal newsletters and community organizations, with participants receiving supermarket gift cards as incentives. Six participants from the WhatsApp study engaged in one-on-one interviews, which focused on both daily food routines and feedback on the WhatsApp study's methodology. Consecutive workshops aimed to deepen understanding of food insecurity. Recruitment challenges were addressed through flexible participation options. Despite low attendance in the first workshop, valuable insights were gained. Inspired by the workshops in Bern, the Almere sessions fostered collaborative problem solving. All collected data, including WhatsApp messages, interview transcripts, and workshop notes, were subjected to thematic analysis. This analytical method allowed for the systematic identification and interpretation of key themes and patterns within the data, thereby enhancing the robustness of our findings.

By using an action research approach, we aimed to empower the participants, making them co-researchers in the process. This helped foster trust and facilitate more meaningful engagement and results. That said, reaching and involving the target group remained a challenge throughout this study. Even though PAR was an effective approach to diving deeply into the personal challenges of socioeconomically disadvantaged people, we faced some challenges along the way. People living in poverty are still stigmatized by society, and therefore the recruitment of participants was challenging and time-consuming. Communication at eye level with the co-researchers during and between workshops was important and meant to use inclusive language and a variety of communication channels, such as electronic mail, WhatsApp, telephone, and the postal service.

3. Preliminary results from the PAR study

Preliminary results show that food insecurity affects not only physical but also mental health. In the following, we present the first results from our PAR study with regard to eating habits and needs, challenges to fulfil the needs, and individual solutions mentioned by our co-researchers.

Eating habits and needs

In Almere, the co-researchers sent photos of their eating behaviour via a WhatsApp study. In Bern, too, photos of eating and cooking behaviour were taken by the co-researchers and discussed during the workshops together. These photos were used not only to gain information, but also as conversation starters. In both countries, we saw a variety of meals. Furthermore, most co-researchers wanted to eat healthily and sustainably. Fresh produce and home-cooked food are fundamentally important in both countries. Nevertheless, one older co-researcher in Bern mostly consumed frozen convenience food. Some other older co-researchers in Bern disliked cooking for themselves alone. As they could get coffee and lunch cheaply at a community centre, they sometimes took advantage of this opportunity, seeing eating together with other pensioners as something special. The co-researchers in Almere generally tried to eat healthy meals but did not always manage to do so. The food patterns of the co-researchers in both countries were influenced by culture and habits. One co-researcher in Switzerland explained, "I don't eat that much meat, but in my culture, if you don't cook meat, you're a bad host." Some co-researchers in Almere showed pictures of food eaten at family gatherings, festivities, and parties at work, which sometimes led them to eat more or more unhealthily than they would have wanted. Thus, how meals are consumed depends strongly on the social context, such as eating with family or friends. The co-researchers discussed health issues alongside meal choices often and mentioned, especially in Almere, the risks of an unhealthy diet, including diabetes.

Food was purchased and acquired from different places, such as supermarkets, food assistance organizations, local markets, speciality shops, and others. In Bern, we mapped the physical food environments of the participants. For example, the maps showed their homes

and the places where they most frequently bought food, drank coffee, and ate meals. For some participants, the food acquisition process was an integral part of the day. As one person in Bern told us, "Shortage of money makes everything difficult: cheaper products are less sustainable and I then must shop in supermarkets that I don't morally support." The co-researchers often compared prices and looked for special offers, being willing to put up with inconvenient journeys to several shopping centres. These behaviours take a lot of time and can lead to psychological stress. In line with this, one co-researcher in the Netherlands explained how she visited many different stores to find the best deals, adjusting these to the produce she received from the food aid organization. As someone declared unfit for work, she had more free time to manage her dietary needs, planning her weekly menu around food aid provisions and supermarket discounts. She expressed frustration that discounts target larger households, making it difficult for her as a single-person household. "If I had more money, I would prefer to purchase my groceries at small business owners in Almere. The weekly discounts are helpful but are often targeted towards larger households, which doesn't work for me." She highlighted the trade-off between time and healthy eating, saying, "I trade my time for healthy food because otherwise, it would be impossible to eat healthily on a budget."

We also discussed how the co-researchers informed themselves about healthy and sustainable diets (information behaviour), as all of them seemed to find it important to know where to buy cheap, healthy food. In Switzerland and in the Netherlands, information was primarily obtained from their own families and friends, the internet, and the information on the product.

Challenges in acquiring a healthy and sustainable diet

The challenges discussed participatorily are manifold and comprise high costs, limited availability, time constraints, mobility restrictions, and gaps in knowledge and visibility, as well as the observation that the existing offer fails to match actual needs. Additionally, some Swiss co-researchers did not have enough money to participate fully in social life, unable to afford to go to restaurants or invite friends, for example. For all the co-researchers, healthy food was often expensive, so cheaper options were chosen and affordable healthy food options seemed to be scarce. In Almere, the participants shared similar sentiments, emphasizing that the cost of healthy food was a significant barrier that pushed them to opt for cheaper, less nutritious options. A respondent highlighted how having lunch outside has become expensive, making less healthy choices like fries more appealing and affordable than healthier alternatives like sandwiches from local lunchrooms. There were also time constraints; for example, balancing time and financial stability impacted dietary choices, and the access to healthier options often required dedicated time and effort.

The co-researchers also mentioned mobility constraints that hindered access to food aid. The strategic location of aid organizations seemed to be crucial for accessibility. The weekly market in the centre of Bern was hardly used. The reasons for this included, among many others, food being too expensive at the weekly market and the distance from the neighbourhood to the city centre being too great. In Almere, respondents explained that visiting food aid organizations often required taking a bus, so that so-called free groceries still cost money. This was particularly important in discussions with a local food aid initiative. The food aid initiative is strategically located in a vulnerable neighbourhood to ensure accessibility for residents, especially those with mobility issues who were reliant on scooters or rollators. Co-researchers in both cities noted that food aid organizations, especially foodbanks, often offered very little variety in their assistance, mainly providing shelf-stable products and thus limiting fresh and healthy options. This resulted in challenges to the maintenance of a healthy, balanced diet, especially for those with limited time. In both cities, the need for foodbanks to diversify their offerings to include more fresh and healthy items was emphasized. Soup kitchens were also reluctantly used, as, although open for all, they tend to appeal to homeless people. Eating in a soup kitchen could be stigmatizing and did not match the needs of all the co-researchers. In some cases, the offers were not well known or were too far away from home. As one co-

researcher said, "If you only eat from solitary facilities, this also has an impact on your sense of independence: you are dependent, have no influence on what you actually want to eat, you just eat what you get."

Finally, lack of knowledge hindered healthy food choices, and the importance of accessibility and clarity of nutritional information was highlighted by the co-researchers.

In summary, the challenges in both Bern and Almere highlighted the complex interplay of financial constraints, mobility, knowledge, and availability in shaping dietary choices. This illustrates how solutions must address these intertwined factors to improve access to healthy and sustainable food options for all.

Possible solutions

In both cities, the co-researchers mentioned that access to sustainable and healthy food should be improved. The Almere co-researchers emphasized the importance of improving accessibility by offering cheaper healthy food options or by diversifying food aid and offering more fresh options. Stating time should be recognized as a resource for health-conscious behaviour, they also emphasized the importance of promoting efficient shopping strategies for healthier choices, said that strategic locations of food aid organizations for enhanced accessibility were needed, and thought that mobility needs in service provisions should be considered.

In Bern, co-researchers expressed their desire for fresh food and contact with farmers. We also discussed concrete actions, such as a city map that shows the locations of food aid facilities and cheap and healthy food offers. The only such map that exists covers the city centre only, not every neighbourhood. With a city map, we hope to make existing support facilities more visible and learn where more facilities are needed. Additionally, the co-researchers saw it as an option to enhance knowledge and visibility by improving nutritional education and raising awareness. As a solution, it is important that information about healthy and sustainable nutrition be presented in inclusive, easy-to-understand language. Finally, it is important for the co-researchers to be able to participate and have an active voice. In Bern, one group of participants suggested the joint development of regular events in a community centre. This would include cooking, eating, and providing information about healthy and seasonal food. They also wanted a regular meeting with representatives of the City of Bern, researchers, and the Food Forum Bern.

4. Discussion and conclusion

The results of the workshops in Almere and Bern offer valuable insights into the diverse dynamics of food poverty and food environments. We conclude that, in both cities, a lack of financial means can lead to material and social food poverty and thus to physical and psychological challenges. By examining these two urban areas with their own distinct sociocultural contexts, we can better understand the varied challenges faced by socioeconomically disadvantaged populations. This analysis enriches our understanding and provides information for targeted interventions to address the complex interplay of factors influencing access to healthy and sustainable food environments.

Our preliminary findings highlight the potential of PAR to address complex issues regarding food poverty and food environments. Through PAR, our participants became active co-researchers, contributing valuable insights and perspectives that enriched our analysis and facilitated a deeper understanding of their lived experiences and needs, echoing the participatory ethos emphasized by Bergold and Thomas (2012), Chevalier and Buckles (2019), and Unger (2014). Through the collaborative approach, we were able to better understand the life realities of marginalized communities, and in Bern, for example, we are currently initiating first concrete actions. Additionally, due to close collaboration with the Office for Environmental Protection of the City of Bern, our insights are being taken into account in policy development.

Moreover, our findings align in several ways with the relevant literature on food poverty and food environments. First, our observation regarding the influence of socioeconomic status on dietary choices is in line with the work of Waskow and Rehaag (2011), highlighting the heightened risk of chronic diseases among socioeconomically disadvantaged populations due to limited access to nutritious food. Second, our identification of external factors, such as availability, affordability, and convenience, that shape eating behaviour is in line with the findings of Philipsborn *et al.* (2021) and Turner *et al.* (2018), emphasizing the role of the broader food environment in influencing individual dietary practices. Furthermore, our preliminary results show that the co-researchers are using a diverse range of information sources, such as families, friends, social media, and the internet in general. The qualities of these items of information vary. Thus, it can be concluded that reliable information should be easily accessible and understandable for everyone, as the Scientific Advisory Board for Agricultural Policy, Food and Consumer Health Protection at the Federal Ministry of Food and Agriculture (2020) also emphasizes in its report.

In conclusion, our analyses in Almere and Bern highlight the significance of understanding the diverse dynamics of food poverty and food environments. Through our PAR approach, we have engaged marginalized communities as co-researchers and thus enriched our understanding of their lived experiences and needs. As we move forward, it is crucial to translate these insights into actionable policy recommendations. Targeted interventions should focus on addressing the systemic barriers hindering access to nutritious and sustainable food, such as affordability, availability, and availability of information. Moreover, fostering partnerships between local governments, community organizations, and stakeholders can facilitate the development and implementation of sustainable solutions. By centring the voices of those affected by food poverty, we aim to inform policy decisions and advocate for initiatives that promote equity and social justice in food systems.

Bibliography

Andriessen, T. and Van Der Velde, L.A. (2024) 'How the social dignity of recipients is violated and protected across various forms of food aid in high-income countries: a scoping review', *Agriculture and Human Values*, 41(1), pp. 363–379. Available at: https://doi.org/10.1007/s10460-023-10476-w.

Bergold, J. and Thomas, S. (2012) 'Participatory Research Methods: A Methodological Approach in Motion', *Forum qualitative Sozialforschung*, 13(1).

Chevalier, J.M. and Buckles, D.J. (2019) *Participatory Action Research – Theory and Methods for Engaged Inquiry*. London: Routledge.

Feichtinger, E. (1996) 'Armut und Ernährung: Literaturanalyse unter besonderer Berücksichtigung der Konsequenzen für Ernährungs- und Gesundheitsstatus und der Ernährungsweise in der Armut', *Wissenschaftszentrum Berlin für Sozialforschung (WZB) Discussion Paper*, No. P 96-202.

Gläser, J. and Laudel, G. (2010) *Experteninterviews und qualitative Inhaltsanalyse als Instrumente rekonstruierender Untersuchungen*, 4. Auflage. Wiesbaden: VS Verlag (Lehrbuch).

Heindl, I. (2016) *Essen ist Kommunikation: Esskultur und Ernährung für eine Welt mit Zukunft*, 1. Auflage. Wiesbaden: Umschau Zeitschriftenverlag (Wissenschaftsforum Kulinaristik).

Mayring, P. (2015) *Qualitative Inhaltsanalyse: Grundlagen und Techniken*, 12., überarb. Auflage. Weinheim: Beltz (Beltz Pädagogik). Available at: http://content-select.com/index.php?id=bib_view&ean=9783407293930.

Philipsborn, P. von *et al.* (2021) *Food Environment Policy Index (Food-EPI) Evidenzbericht für Deutschland*, erstellt im Rahmen des vom Bundesministerium für Bildung und Forschung (BMBF) geförderten Policy Evaluation Network (www.jpi-pen.eu).

Scientific Advisory Board on Agricultural Policy, Food and Consumer Health Protection at the Federal Ministry of Food and Agriculture (2020) *Promoting sustainability in food consumption – Developing an integrated food policy and creating fair food environments*. Executive summary and synthesis report, Berlin.

Setznagel, D. (2020) 'Ernährungsverhalten in Armut', *soziales_kapital*, 23, pp. 151–168.

Turner, C. *et al.* (2018) 'Concepts and critical perspectives for food environment research: A global framework with implications for action in low- and middle-income countries', *Global Food Security*, 18, pp. 93–101. Available at: https://doi.org/10.1016/j.gfs.2018.08.003.

Unger, H. (2014) *Partizipative Forschung: Einführung in die Forschungspraxis*, 1. Auflage. Wiesbaden: Springer VS. Available at: https://doi.org/10.1007/978-3-658-01290-8.

Vilar-Compte, M. *et al.* (2021) 'Urban poverty and nutrition challenges associated with accessibility to a healthy diet: a global systematic literature review', *International Journal for Equity in Health*, 20(1), p. 40. Available at: https://doi.org/10.1186/s12939-020-01330-0.

Waskow, F. and Rehaag, R. (2011) 'Globaler Ernährungswandel zwischen Hunger und Übergewicht', in Ploeger, A. *et al.* (eds.) *Die Zukunft auf dem Tisch: Analysen, Trends und Perspektiven der Ernährung von morgen*. Wiesbaden: VS Verlag für Sozialwissenschaften, pp. 143–165. Available at: https://doi.org/10.1007/978-3-531-93268-2_10.

PAPER SESSION 2.C
COMMUNITY GARDENING

Uneven Recognition: Community Gardens or Allotments?

— HASSON Alban

Uneven Recognition: Community Gardens or Allotments?

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My PhD Thesis entitled "Urban Agriculture & Democratisation: Comparing Allotments & Community Gardens Trajectories in London" presents the contributions of Urban Agriculture practitioners in expanding the political space towards a democratic food regime. It assesses the specific democratic processes of each trajectory and how they seek another way for urban citizens to engage with food and place. Through historical and ethnographic in-depth case studies, the thesis sheds on the struggles faced by UA practitioners to create a more just and sustainable food system. It explores how community UA practitioners engage with, negotiate, or resist current governance networks to expand the political space towards these democratic processes, this thesis also highlights some of the discriminations at play. Interestingly, the research indicates a prioritisation of the community gardening trajectory over the more traditional allotment trajectory by local policymakers and planners. My intervention will review what this means in terms of land distribution for Urban Agriculture, the establishment of democratic food governance, and the resistance to neo-liberal urban development in the context of a corporate environment Food Regime. Specifically, I will discuss how bottom-up initiatives contrast with the top-down tendency of neo-liberal public partnerships that tend to co-opt the Urban Agriculture movement in delivering social prescribing on meanwhile spaces, and ways forward in building solidarity between these various UA groups.

Keywords: Allotments, Community Gardens, Governance, Prioritisation.

Introduction

Over the last 7 years, I had the chance to study a wide range of Urban Agriculture initiatives in and around London, and in this paper, I will elaborate on one of the main empirical findings of this PhD research, namely, the prioritisation of the community garden trajectory over the allotment trajectory by London policymakers and planners and what this means for the future of Urban Agriculture (UA) in London.

Conversations with practitioners, scholars, and activists in the field and a detailed review of planning and public policy documents referring to UA in London reveal how the allotment trajectory has been sidelined in comparison with the community gardening trajectory in London. This paper will discuss what this means in terms of land distribution for UA, the establishment of democratic food governance, and the resistance to neo-liberal urban development in the context of a corporate environment Food Regime.

The Impact of Community Gardening Prioritisation on Re-Claiming Land for Urban Agriculture

Since the start of the 2008 Capital Growth Campaign in London, local authorities reports around the progress of UA in the UK capital are often very optimistic, and one could even argue, misleading…

On the one hand, Fletcher & Collins (2020) reported that 41 London allotment sites closed completely between 2013 and 2020, but on the other hand, Capital Growth reported the creation of more than 2,700 new community gardens between 2008 and 2018 (GLA, 2018, 31). While these numbers indicate a certain prioritisation of the community garden model over the allotment one, the impact of this prioritisation on the scale of community food production in London or the general quantity of land available for community food growing is not clear due to a lack of appropriate information available on land devoted to UA under each trajectory.

Some observers, such as Chang (2013), argued that there was no serious increase in food production from the Capital Growth Programme between 2008 and 2013. While others have argued that the land made available for community gardening is, in any case, not comparable to that of allotments in terms of size or duration of the lease (Participant Observation, 14.03.23).

Despite these observations, the Capital Growth campaign still tends to be considered successful in the establishment of a strong network of UA practitioners. Indeed, many community gardens in the network benefited from the information available in the newsletter (policy progress, best practices, new grant opportunities, activity reports, and helpful statistics to support the movement), and some even accessed helpful webinars or training (Sustain, 2019, 7). However, while it is true that this campaign has created important connections between UA projects and practitioners, thereby strengthening London's UA's political recognition, it is less clear how many community growing projects started or even benefitted from the campaign in more tangible terms, and most importantly, in terms of land turned into cultivation.

This is important because, between 2008 and 2012, the Capital Growth campaign partnered with funders for London-wide grants aiming to create 2012 growing spaces for the 2012 London Olympics, an objective that they achieved according to their reports (Sustain, 2013). However, the new community growing spaces created back then ranged from legitimate new community gardens to small accessible raised beds in existing allotments, schools, or council estates, and it is unclear how many subsist today given the lack of available data.

During my PhD fieldwork, I became involved with the Wenlock Barn Estate community growing projects. This allowed me to review some of the long-term implications of this funding campaign since the Wenlock Barn Estate projects had been among the ones selected for East London Green Grid and Big Lottery's Local Food funding (part of Capital Growth). What I observed was that beyond initial funding, and once the professional initiators of the garden had left, very little support or even interest in the future of the gardens was demonstrated. If it were not for the residents organising themselves, many projects would have ceased functioning or closed once their funding cycle had been completed (which happened to the "Herb Garden" project in that estate). This lack of support beyond initial funding led to some speculation about the potential failures of the Capital Growth campaign from some observers (Nunes et al., 2015, 63).

Interestingly, Capital Growth holds a map of the sites in its network, but it is unclear how gardens on this map benefitted from the network's support or if they simply signed up so they could appear on the main map recording UA projects in London. To ensure that this map is up-to-date and not populated with spaces that are now closed, a record of the active accounts on their platform is kept by Capital Growth staff (recorded over the last 3 years) (Participant Observation, 15.05.2023). However, many projects do not update their account regularly, meaning some sites appearing on the map could have been closed within the last 3 years, while others that are not listed on the map may be thriving without ever having signed up (e.g., SHAS, an allotment studied as part of my research was not part of their network but has been thriving since 1894 and is much bigger than any of the community gardens present on this map). What this unfortunately demonstrates is that most of the data collected tends to concentrate on the most active sites, those that adopt a professionalised non-profit social service approach, and not the vulnerable, purely community-led sites.

Some may argue that the inability of Capital Growth to effectively monitor the successes and failures of the sites it helped set up between 2008 and 2012 can be seen as evidence of a tokenistic attitude towards UA (considering that announcing the campaign's successes in supporting new growing spaces is more beneficial for them than tracking each site's good health). However, I would tend to argue that it is evidence of a lack of means from Capital Growth (its resources have decreased over the last 8 years) and a lack of community champions keeping track of their gardens' accounts. Hence, while the Capital Growth Network

keeps growing on paper, it is unclear how many of the early sites still subsist today, and there can be speculations on whether the campaign has been as successful as it claims.

Overall, with regards to the issue of land, and when taking the figures provided by the London Assembly Environment Committee from 1996 to 2006, there was a net loss of about 35 hectares of allotment land in London during that period (London Assembly Environment Committee, 2006, 6). Moreover, considering that Fletcher & Collins (2020) argue that the rate of disappearance of allotments in London has tripled during the last 10 years, it could be hypothesised that approximately 105 hectares have been lost during this period. Even if there is no way to verify if this is an exaggeration, this number is considerably higher than the 79 hectares of new community gardens created by the Capital Growth campaign between 2008 and 2018 (GLA, 2018, 31), and from which many may not have survived. However, these numbers are assumptions based on previous research, and a general lack of available data on actual land use means further research is needed to verify these hypotheses.

The Disparity in Public Policy Representation between Allotments and Community Gardens

While it is unclear what the impact of the prioritisation of community gardens versus allotments has been in terms of land distributed for UA, public policy analysis clearly reveals that there has been a political prioritisation.

For example, there was no mention of allotments in any of the minutes of the London Food Board between March 2017 and September 2021, and while the London Food Strategy 2018 mentions the protection of "existing allotment sites" as an aspiration, it only calls for the "provision of space for community gardens" (GLA, 2018, 46). Similarly, the London Plan 2021 policy G8 states that it aims to "protect existing allotments and encourage the provision of space for Urban Agriculture" without specifying the need for new allotments or longer tenures for these new growing spaces (Mayor of London, 2021, 331). Instead, the plan simply mentions that developers need to be "explicit over how long sites will be available to the community" (Ibid). This omission has been noted by allotment societies and Sustain (the alliance for better food and farming that oversees capital growth) who participated in the London Plan Consultation, but none of their recommendations to rephrase the objectives of the plan and to include longer tenures on new sites have been adopted in the final document (Ealing Dean Allotment Society, 2020, 2; London Food Link & Sustain, 2020, 10).

This indicates a general willingness amongst policymakers to reinforce the flexibility of community growing spaces in planning rather than provide them with more longevity (or at least an inability to address these questions). Still, the general absence of allotments from these conversations may also partly be due to their isolation because they have often been portrayed as privileged spaces that lack connection with the wider community or environmental issues when compared to community gardens. This may have influenced the makeup of the London Food Board, since the different Mayors of London found it easier to find specialists on urban food issues from the ranks of professionalised "social service based" community gardens rather than allotmenteers, as the former tended to be more vocal over recent years. Besides, even with a representative of the allotment trajectory on the board, it would still not have been certain that the issue of allotment recognition could have been brought forward since the Chair remains the main person who makes decisions and other members' voices are quite limited (Halliday & Barling, 2018, 190).

Under these circumstances, it is not surprising to see that the Islington policy on allotments, for example, stated that "it is both simpler and more effective to create community gardens and other food growing opportunities rather than allotment sites" (Islington council, 2021, 7). Despite Islington having opened a new allotment in 2010, the cost of creating a new allotment is still "considerable", and for many, community gardens are said to "provide a better

community facility than allotments" (Ibid). This is how community groups have responded when asked why there was a prioritisation of community gardens rather than allotments. For instance, the Islington-based group Octopus Communities stated that it was mostly "because of the lack of space […] and because only a few benefits from the allotments" (Interview Quadrant Estate Member, 23.11.2021).

As a result, there is a clear consensus that community gardens are preferable in inner London boroughs, as they can widen the beneficiaries of UA in London without having to create more spaces. Moreover, many argue that "most people don't grow primarily to feed the family – they do it for enjoyment, so massive plots are an anachronism in many cases." (Appleby, 2016). This is true, but it is also significant to note that practicing UA for self-sufficiency and self-determination holds very different and radical meanings to that of leisure gardening (Crouch, 1997). While the argument for broadening participation may be understandable, the assumption that community gardens provide a better community facility than allotments is problematic. Indeed, if you compare the neo-liberal political positioning of community gardens today with the radical emancipatory allotment movements of the 19th and early 20th centuries (Andrews & Palmer, 2016; Burchardt, 2002; Crouch, 1997), it is clear that some community gardens align themselves more towards sustainability fixes (McCann et al., 2022), and as such, the exclusion of allotments and other subaltern urbanisms from the more mainstream channels can be representative of certain power dynamics that deserve to be explored (Ginn and Ascensão, 2018).

The Changing Functions and Convergence of UA Trajectories

Following this discussion on the apparent prioritisation of community gardens in terms of land distribution and policy representation, it is now necessary to explore the consequences of such prioritisation on the democratic and transformative potential of UA.

As discussed above, the possibility of delivering more benefits to local populations while using less space and fewer resources is starting to convince outer London boroughs, which also suffer from similar land shortages. The result is that the allotment trajectory is starting to resemble the community garden trajectory. This is done through multiple mechanisms, such as dividing up plots, creating community plots, seeking out grants, and/or increasing the administration of the sites to ensure a quicker turnaround of participants. This is demonstrated by this quote from a Croydon allotment officer:

"We try to maximise space, like reduce it in size, multiple occupancies… We don't give one family one full plot because we want to increase the amount of coverage. […] what you need to understand is improving does not always mean opening more and more sites because that will waste a lot of our money and maybe that's something that is not needed." (Interview Allotment Officer Croydon, 12.11.2021)

Here, it is useful to examine the underlying assumptions of the local authority narrative. It is mentioned that opening new sites could be a "waste", which seems to indicate that either there is no perceived demand or that allotments are not perceived as substantial enough in value compared to other investments. Again, this may be yet another piece of evidence of the inability of policymakers to recognise all the values generated by UA spaces. Another argument is that it is better to improve existing sites than to open new ones, which is what the Croydon Council tried to do in 2019 by injecting £350,000 into the sites they directly manage, to provide much-needed repairs and amenities (Inside Croydon, 2019). It is certainly true that Croydon Council already struggles to administer their current sites, and that any new sites would represent an additional and unsustainable burden for them. However, it would be false to say that new sites are "something that's not needed" or "unsustainable", given the increasing allotment waiting lists in Croydon and elsewhere (and the fact that these new sites can also be self-administered). The fact that recently a private allotment has opened in Croydon and proposes

allotment plots at a much higher price for those who can afford them evidences the need for more affordable allotment plots in the borough (Roots Allotments, 2024).

The issue is that as an outer London borough, Croydon has a statutory duty to provide enough plots under the Small Holdings and Allotments Act 1908. That is, if they believe that there is a demand for allotments. However, there is a tendency for councils to minimise actual demand because of their incapacity to deliver on it. Due to this inability, LAs like Croydon Council are pressured to adopt a narrative that shifts the definition of the problem from one of value recognition to one of a culture of social welfare dependence. In doing so, the council transfers welfare responsibilities to the communities themselves without acknowledging that they lack the power and resources to undertake them. Overall, this increased tendency for LAs to outsource community gardening projects to the same professional organisations continues to erode the capacity of the state to deliver its own UA projects while impacting the diversity, representability, pedagogy, and level of democratic conscientisation on UA sites.

While allotments may need to progressively evolve towards more subdivisions to increase the numbers of active volunteers on their sites, and to widen their benefits to the community, this should not divert attention away from the real necessity, which is to plan and reclaim more spaces for UA in London. Not everyone realises this necessity, and this is partly due to the tendency of each group to not see the broader picture when it comes to the landscape of UA distribution in London. Local councils tend to only consider the provision of allotments within their administrative boundaries, ignoring the reality of allotment provision across London as a whole.

It may be more just to only focus on provisions within the confines of the borough due to the disparity of land availability and real estate value among London's boroughs. However, because of this administrative fragmentation, it becomes difficult to assess real needs at the London level. This led Fletcher and Collins (2020, 9) to argue that allotment provision should no longer be considered on a case-by-case basis if we want equal opportunities to grow food across London, but that instead, the effects on the distribution of allotments must be considered using mapping techniques and increased communication between boroughs. Understanding this, Capital Growth has established inter-council quarterly meetings beginning in late 2021, allowing for better assessment of needs across the capital, and is currently developing a more regional series of events for UA practitioners across the South, East, West, and North regions of London. Inter-council meetings are particularly effective, according to Capital Growth, since councils are more inclined to be inspired by the actions of their peers (Participant Observation, 15.05.2023).

With all this in mind, while there has been some governance pressure from the bottom since 2004, as well as a more proactive role of LA's in connecting sectors and areas, particularly during and after the COVID-19 pandemic (e.g. food partnership coordinator roles 2021, food transition plans 2021, right to grow campaign 2021, food growing network and strategies 2021) (Turcu & Rotolo, 2022), the more mundane "subaltern" UA community involved in the politics of self-determination remains extremely vulnerable and unrecognised. Indeed, under the current model, long-term approaches based on ethics of care, knowledge and service coproduction, and the recognition of the commons' complexity seem to have been replaced by neo-liberal sustainability fixes, which tend to prioritise social prescribing, cost efficiency, and single-issue criticisms. The combination of all of this could have dramatic repercussions on the capacity of community members to innovate and articulate alternative common imaginaries and policy priorities (Shostak, 2022, 960).

Conclusion

As more councils across the country begin to divide up plots and build new smaller allotment sites (APSE, 2022), there is a real feeling among community gardeners and allotmenteers that

"the two (trajectories) are converging" in terms of social organisation (Interview Quadrant Estate Member, 23.11.2021). But whether such a degree of convergence maximises the democratic processes of both trajectories is far from clear. At present, we are witnessing more of a replacement of one trajectory by the other than a convergence. Indeed, allotments have been drawing inspiration from community gardens, especially with regards to a widening of their functions beyond food and a growing accessibility, which can be defined as democratisation. Community gardens, I argue, have not sufficiently connected with the rich history of the allotment trajectory (however, the recent rapprochement between Capital Growth and NSALG regarding legal aid against eviction is a positive development). Moreover, community gardens that are increasingly moving away from collective self-organising principles to becoming providers of services in place of the State can fall short in terms of community ownership and food regime democratisation. As such, it is argued that community gardens, as well as allotments that begin to resemble community gardens, often continue to subsidise the cutbacks to State-sponsored services by engaging in a race to the bottom aimed at delivering more with less, and the result is a consolidation of neo-liberal governmentality within UA.

Under all these circumstances, the current public policy prioritisation of community gardens over allotments seems to be detrimental to the democratisation of our food regime. To have the best of both worlds, other social and political practices and other forms of governance for UA are needed. What should be adopted for a more democratic food regime, however, is still unclear for many, but that is the very purpose of this conference.

Bibliography

Andrews, K. & Palmer, L. (2016) Blackness in Britain. Routledge. New York

Appleby, M. (2016) Growing demand for smaller allotments. Richard Jackson's Garden. Online, available at: https://www.richardjacksonsgarden.co.uk/growing-demand-for-smallerallotments/

Burchardt, J. (2002). The allotment movement in England, 1793–1873. Rochester: Boydell and Brewer

Chang, M. (2013) Growing a commons food regime: Theory and practice (Doctoral Dissertation). University College London, London, UK.

Ealing Dean Allotment Society (2020) Comments on Draft New London Plan from Ealing Dean Allotment Society. Online, available at: https://www.london.gov.uk/sites/default/files/Ealing%20Dean%20Allotment%20Society%20%282920%29.pdf

Fletcher, E. & Collins, M. (2020) Urban agriculture: Declining opportunity and increasing demand - How observations from London, U.K., can inform effective response, strategy, and policy on a wide scale. Urban Forestry & Urban Greening, 55(1): 1-11

Ginn, F. and Ascensão, E. (2018) Autonomy, Erasure, and Persistence in the Urban Gardening Commons. Antipode, 50(1): 929-952

Greater London Authority (2018) The Draft London Food Strategy. Healthy and sustainable food for London draft for consultation. Available at: https://www.london.gov.uk/sites/default/files/london_food_strategy_2018_15. pdf (accessed: 23 November 2018)

Halliday, L. & Barling, D. (2018) The Role and Engagement of Mayors in Local Food Policy Groups: Comparing the Cases of London and Bristol, in Barling, D.& Fanzo, J. (eds.): Advances in Food Security and Sustainability, Elsevier: London, Chapter 6, 177-209.

Inside Croydon (2019) Council digs deep to find £350,000 to improve allotments. Online available at: https://insidecroydon.com/2019/08/17/council-digs-deep-to-find-350000-toimprove-allotments/

Islington Council (2021) Islington Council Allotment Policy. Online, Available at: https://www.islington.gov.uk/~/media/sharepoint-lists/publicrecords/leisureandculture/information/adviceandinformation/20212022/20210611islingtoncouncilallotmentpolicy1.pdf

London Food Link & Sustain (2020) Comments on the draft London Food Strategy. Online, available at: https://www.sustainweb.org/resources/files/responses/London_Food_Strategy_Response_publish.pdf

McCann, E., McClintock, N., & Miewald, C. (2022) Mobilizing 'impermaculture': Temporary urban agriculture and the sustainability fix. Environment and Planning E: Nature and Space, 6(2): 952-975

Mayor of London (2021) The London Plan 2021. Online, available at: https://www.london.gov.uk/sites/default/files/the_london_plan_2021.pdf

Nunes, R., Meulen, S., Mol, G. & Bailey, A. (2015) Cities on the GROW: pathways to supporting the sustainable growth of urban food enterprises in London, Reading and Almere: final report. Alterra-report, 2688 (143): 1-143

Roots Allotments (2024) Meadow Hill Fields Allotments, Croydon. Online website available at: https://www.rootsallotments.com/south-london-croydon-allotments?gad_source=1&gclid=Cj0KCQjw6auyBhDzARIsALIo6v-RW_PqUmVjGK3A2kyxy-ZO8U6I739oHeORLZ6Q37OXpMh5L-5TqUUaAgfSEALw_wcB

Shostak, S. (2022) "How do we measure justice?": missions and metrics in urban agriculture. Agriculture and Human Values, 39(1): 953–964

Sustain (2013) Financing community food: Securing money to help community food enterprises to grow. Online, available at: https://www.sustainweb.org/secure/financing_community_food_2013.pdf [Accessed: 30 October 2020].

Sustain. (2019) Strength in diversity Capital Growth survey 2017–18. Sustain. Online, available at: https:// www.sustainweb.org/publications/strength_in_ diversity/?section=66

Turcu, C. & Rotolo, M. (2022) Disrupting from the ground up: community-led and place-based food governance in London during COVID-19. Urban Governance, 2(1): 178-187

Community gardens as a response to the contradictions of sustainable urban policy: Insights from the Swiss cities of Zurich and Lausanne

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Community gardens as a response to the contradictions of sustainable urban policy: Insights from the Swiss cities of Zurich and Lausanne

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In this contribution we explore how policy discourses on urban sustainability impact the governing of urban food gardening in favouring community gardens. Our main hypothesis is that community gardens better accommodate the tensions created by the discourses of the compact and green city compared to other types of food gardening, especially allotment gardens. In the context of the Swiss cities of Lausanne and Zurich, analysis of policy documents confirms this hypothesis by identifying four frames that orient policies toward favouring community gardening: (i) *Adapting* green space planning to densification favours community gardening with their modest, flexible and multifunctional design, (ii) *Revaluating* the role of urban food gardening in urban sustainability represents community gardening as a new multifunctional benchmark, (iii) *Reorganizing* urban food gardening fosters diversity in gardening opportunities which in turn supports a variety of forms of community gardening, (iv) *Justifying* urban food gardening through public values and needs supports community gardening with their cost-efficient green space management, lower land management and more active citizen participation. In this vein, urban policymakers continually turn to community gardens as a strategic urban planning tool that gives urban green space greater legitimacy in the wake of the densifying city. Overall, urban food gardens continue to be negotiated between space-related marginalisation and socio-political significance serving different needs to urban citizens. This results in the need of a more sophisticated planning approach considering different types of urban gardens related to their location in the built city, associated functions, and user groups.

Keywords: urban sustainability, urban gardening, compact city, green city, public policy, frame analysis, Switzerland[1]

Introduction

The way sustainability goals are operationalised in cities often leads to governance frameworks and policy objectives that may contain potential contradictions and conflicts. The "compact city" and the "green city" are two such concepts, repeatedly mentioned in discourses on urban development that carry potential conflicting visions of sustainability (Madureira, Monteiro, 2021). The compact city with its dense and proximate physical development, comprehensive public transport system, and good accessibility to local services and jobs is one of the leading paradigms of sustainable urbanism (Bibri et al., 2020). Yet, scholars have identified trade-offs in the striving for compactness, especially in social and environmental aspects of sustainability, including a potentially low proportion of urban green space (Haaland, van den Bosch, 2015). At the same time, urban green is continually used by urban planners as a tool for urban sustainability planning, e.g. as an adaptation strategy to climate change in the city (Madureira, Monteiro, 2021) and to contribute to the quality of life and ecosystem services in cities (Jim 2013). In the context of the compact city, urban green space – including spaces for food production – often is contested.

The establishment of community gardens has blurred the traditional land-use boundaries between allotment gardening and farming, which has subsequently increased competition for urban land (Jahrl, Schmid, 2017). These developments pose challenges for urban policy, as

to simultaneously satisfy different user interests for land use against the background of densification and the pursuit of urban sustainability (Frauenfelder et al., 2014).

Starting with the observation by Tappert et al. (2018), that the compact city discourse favours the promotion of community gardening, we take a closer look at urban greening policies and planning by analysing the underlying frames resulting in favouring community gardening. We hypothesise that community gardens better accommodate the tensions created by the discourses of the compact and the green city compared to other types of food production. We identify emerging frames in policy documents in dealing with different land-use types and user interests, based on the example of the Swiss cities Lausanne and Zurich. The study focuses on two types of land use for urban food production, the long-standing tradition of allotment gardening and relatively new community gardening, while also touching upon city farming.

Conceptual perspectives

Compact city: Densification and urban sustainability

Urban sustainability is usually oriented towards the widespread three-pillar model: ecological, economic, and social planning parameters, with ecology often prioritised. Sustainable urban development focuses on resource-conserving and environmentally compatible development, where densification, mixed land use, and a polycentric planning approach are considered sustainable per se (Rink, 2018). Taken up in the concept of the compact city, it is widely acknowledged by policy and science as a leading planning concept to limit urban sprawl through "inward development" (Artmann et al., 2019; Schweizerischer Bundesrat, 2001). This approach potentially results in e.g. lowering per capita rates of energy use, reducing pollution due to the proximity to amenities of daily life, but also e.g. higher land and property prices or decreasing neighbourhood satisfaction (Bibri et al., 2020). In the compact city, green space is subject to more constraints and pressures and is more vulnerable to degradation and loss (Jim, 2004).

Green city: Green space and urban sustainability

Breuste (2020) defines the green city as preserving existing nature and enhancing every kind of urban nature while making it useable for urban residents. The Swiss Federal Office for Spatial Planning advocates for the integration of natural green spaces into urban planning and the promotion of functional and social mixing to mitigate the negative effects of densification and enhance resident well-being (Schweizerischer Bundesrat, 2012). Green spaces, once for recreation or gardening, now serve broader social, ecological, and economic purposes by providing ecosystem services (Pincetl, Gearin, 2005). For example, urban gardens help address societal challenges such as climate change, food security, biodiversity loss (Frantzeskaki, 2019; Artmann, Sartison, 2018). Gardening in the city is undergoing a process of change. While traditional allotment gardens shaped the gardening cityscape for many decades, new forms of gardening, like community gardens, are actively supported by urban policy as part of the urban sustainability discourse (Rosol, 2010; Jahrl et al., 2021).

Methods

Applying a "descriptive case study" (Yin, 2009), we conducted a qualitative content analysis of documents from politics/administration (administrative strategies, plans, reports, press releases and other grey literature). Furthermore, information gathered through websites and documents from media, science and civil society organisations informed the analysis. Four exploratory interviews with policy administrators from the two case cities were carried out to obtain additional documents and data not available online. The final sample consists of 160 documents mainly from 2000 to 2018 and updated in 2021.

For analysing policy documents we draw on categories of frames developed by Snow and Benford (1988) in analysing collective action. Their framework rests on three core framings: (i) identification of a problem and the attribution of blame or causality (diagnostic frame),

(ii) proposed solution to the diagnosed problem, which entails strategies, tactics and targets, (prognostic frame), (iii) promoting collective action and emphasising responsibility to resolve the problems identified (motivational frame). In our analysis, the three frames were adapted to the aim of the research. They were used as lenses to explore the data, to identify the meaning, values and beliefs expressed in the analysed policies and to structure the results.

Results

Diagnostic: Challenges of densification and urban food gardening in the city

In accordance with national guidelines, Zurich and Lausanne pursue urban densification to accommodate population growth. In Zurich, city strategies define the future development of the city to mainly take place within the existing building areas. The city of Lausanne has defined centres of development to concentrate population and job growth in city areas with the best public transport links and services, while aiming to limit development outside these centres. Despite the compact city approach being both advocated and criticised in planning documents, it is legitimised by urban growth. Zurich expects 100,000 more inhabitants by 2040, while Lausanne anticipates 30,000 new residents by 2030. Both cities aim to preserve green space as a means of combating climate change, increasing ecological connectivity, and promoting biodiversity and to overall enhance quality of life for urban citizens.

The impact of densification on gardens varies between Zurich and Lausanne. In Zurich, gardens face ongoing threats from new building projects and the creation of multifunctional open spaces for recreation, leading to a trend of relocating allotment gardens to the city outskirts. Conversely, in Lausanne, allotment gardens have historically occupied the outskirts, which are now becoming popular centres of urban development. Since 1996, Lausanne has addressed the need for green spaces in highly populated areas by establishing community gardens known as "plantages," which remain in high demand. Zurich struggles to maintain the current number of existing gardens, despite very high demand from citizens, as evidenced by long waiting lists for garden plots.

Prognostic: Strategies of densification and urban food gardening in the city

Gardening and farming in the cities of Lausanne and Zurich are integrated into public policy strategies to varying degrees. In Zurich, the focus of the green space management department is primarily on preserving and enhancing green spaces. In Lausanne, this objective is more deeply rooted in overarching strategies. In Zurich, green spaces designated for gardening face significant competition from other public uses. Consequently, the department responsible emphasises that gardens not only benefit gardeners but also contribute to preserving and promoting public goods such as soil health, biodiversity, and landscape aesthetics. Public participation in garden maintenance is considered essential for reducing maintenance costs in both cities.

Both cities have launched strategies in recent years on the further development of urban food gardening. In Zurich, a strategy on gardening was defined which for the first time considers the different types of gardens in the city, including community gardens. The strategy underlines the need to counteract densification and to limit building density to the necessary minimum as well as to minimise soil sealing. Lausanne presented its "urban agricultural policy: from balconies to fields". This strategy presents the first Swiss-wide policy on gardening and farming in a city. In both city strategies, the municipal authorities emphasise the need to diversify its gardening offers. Yet, the strategies of both cities show differentiation in the importance of different types of urban food gardening. Over time, allotment gardens have lost importance as a strategic planning tool in both cities. Community gardens are supported for their broader sustainability benefits (e.g. lower sealing of soil, capacity to settle in the interstices of the city, addressing further beneficiaries' groups).

Motivational: Acting to address densification and urban food gardening in the city

In both cities, efforts are underway to increase the availability of garden plots through various measures. Zurich has seen an increase in community gardens, mainly through the conversion of allotment gardens. Both cities aim to restructure allotment areas towards community gardens by limiting the size of new plots, prioritizing collective shelters, and reserving communal spaces to foster conviviality among gardeners and visitors, such as play areas for children and recreational zones. Additionally, the city of Lausanne is implementing several measures to increase the availability of garden plots and enhance urban citizen participation. The "pocket gardens" initiative encourages residents to identify small areas suitable for gardening, and the city plans to integrate "urban agriculture" into new urban districts.

Both cities emphasise multifunctional land use, as demonstrated by newly designed landscape park projects on public city land that combine gardening and/or farming with leisure, recreation, community participation, and ecological networking. Gardening and farming, once conducted in defined and separate areas, are increasingly overlapping on public city land in both cities. Examples are the conversion of city-owned horticultural and agricultural land into community gardens or the conversion of traditional family farms into neighbourhood farms.

Discussion and conclusion

This paper explored how policy discourses on urban sustainability impact the governing of urban food gardening in the cities Zurich and Lausanne. The analysis identified four main frames, which help to elaborate the rationale for prioritising community gardens in the context of densification and urban sustainability.

Adapting green space planning to densification

Analysing policy documents on spatial planning and greening policies reveals the compact city discourse as a dominant influence on urban food gardening governance. Both cities advocate for the compact city to combat urban sprawl and preserve agricultural land, setting the framework for greening policies and urban food gardening strategies. Densification is seen as both a "chance" and a "threat". "Chance", as it fosters innovative greening strategies as seen in the city of Lausanne (e.g. tradition of "plantages", compulsory garden areas in development projects), and "threat" as it results in the loss of garden areas and a biotic homogenisation of the remaining green space as highlighted in the city of Zurich.

The urban context explains these dual perspectives. Zurich, with three times the population and twice the size of Lausanne, offers ten times the allotment garden area. Zurich's densification pushes allotment gardens to the outskirts, while Lausanne traditionally locates them there. This has favoured the establishment of inner-city community gardens, which are more space-efficient and flexible than allotment gardens. However, this flexible planning approach may be affected by long-term urban development and is often criticised for being "non-committal". Nevertheless, it legitimises urban gardening as it allows active use of public space and supports strategic urban planning.

Revaluating the role of urban food gardening in urban sustainability

As highlighted by Jahrl et al. (2021), the more diverse functions urban policy attributes to gardening, the less interchangeable it becomes compared to other land uses, making it more likely to be included in urban planning. Traditionally, urban gardens focused on self-sufficiency and recreation for individuals. Today, their roles are embedded in the urban policy context. The loss of green space prompts critical evaluation of existing land use and its functions. Urban policies in both cities prioritise gardening types that serve multifunctional goals within an urban sustainability framework, notably favouring community gardening.

Derkzen et al. (2017) suggest that community gardens can trigger a shift to novel multifunctional urban green spaces providing a wide range of ecosystem services such as food production, climate regulation, local identity, and education. Our analysis identifies community

gardens as a new benchmark for multifunctional land use, against which allotment gardening and city farming are assessed. In Zurich, for example, community gardens on farmland have transformed single-crop farming into diverse, collective cultivation, enhancing food production and participation.

The role and functions of urban food gardens also depend on their location. Gardens contrast with the built environment, whether in the city centre or outskirts. Their proximity to built surfaces is crucial. Gardens in landscape parks help achieve multifunctional goals, including food sovereignty and recreation. When integrated into new building projects, they promote neighbourhood cohesion and social integration.

Reorganising urban food gardening to foster diversity in gardening opportunities

While cities are keen to keep urban food gardens as part of the emphasised green city context, urban food gardening is undergoing a reorganisation to align with urban policy goals. Allotment gardens, once lauded, now face criticism for high land consumption and limited public accessibility. Community gardens, with varying levels of professionalism, are now emerging on city-owned farmland, while farms transition into voluntary neighbourhood collectives, reshaping land use dynamics and promoting community gardens over city farming. Legal regulations, like zoning laws, ensure precise land use definitions, favouring modest community gardens over densely built allotment gardens on farmland (Ernwein and Salomon-Cavin, 2014).

In the context of densification, the garden offer is becoming continual differentiated ranging from flexible and improvised gardens to established long-term gardens such as in agglomeration or landscape parks or in zones defined for this purpose. Such reorganisation and diversification in gardening opportunities are also influenced by a changing society with different demands on green space and the interest for more active participation in the governance of urban green space (Rosol, 2010). Densification and limited space are encouraging collective action and greater citizen responsibility in green space management.

Justifying urban food gardening through public values and needs

In the context of urban sustainability, green space is vital for citizens' quality of life but is critically examined in terms of design and function. The greening strategies of both cities highlight the benefits of urban food gardens, which include cost-efficient green space management, planning flexibility, and public use. In answering the hypothesis, we conclude that community gardens with their modest, flexible and multifunctional design are more likely to accommodate the compact and the green city discourse, while better serving urban sustainability goals than allotment gardens or city farming. Community gardens legitimise green space by encouraging active public participation. However, community gardens, often located in inner-city areas subject to urban development, face challenges. While community gardens aim to ensure a biological enhancement of urban space, a reduction of plot size in gardens allows access for more citizens but entails a more intensive use of garden space with a potentially negative impact on biodiversity.

While cities are trying to anchor urban food gardening in addressing multifunctional land use, food production as such mainly plays a subordinate role. In times of growing awareness for the need of a socio-ecological transformation of the food system, and city efforts to further legitimise urban food gardens, urban policies ought to embed urban food gardening within broader urban food strategies to leverage its socio-ecological benefits. The diversification of garden types continues, with cities needing to align planning approaches to user interests. This reorganisation can marginalise certain groups while attracting new ones. Future research should address these dual developments to inform balanced garden planning, considering various governance models and user groups to enhance the social relevance of urban gardens. This paper underscores the need for a nuanced planning approach that addresses different garden types, locations, functions, governance models, and user groups to meet urban sustainability and sustainable food system challenges.

Bibliography

Artmann, M. and Sartison, K. (2018). The Role of Urban Agriculture as a Nature-Based Solution: A Review for Developing a Systemic Assessment Framework. Sustainability, 10(6), 1937, https://doi.org/10.3390/su10061937.

Bibri, S. E., Krogstie, J., & Kärrholm, M. (2020). Compact city planning and development: Emerging practices and strategies for achieving the goals of sustainability. Developments in the Built Environment, 4, 100021. https://doi.org/10.1016/j.dibe.2020.100021

Breuste, J. (2020). The Green City: General Concept. In J. Breuste, M. Artmann, C. Ioja, & S. Qureshi (Eds.), Making Green Cities: Concepts, Challenges and Practice (pp. 1–15). Springer Nature.

Ernwein, M. and Salomon-Cavin, J. (2014). Au-delà de l'agrarisation de la ville: l'agriculture peut-elle être un outil d'aménagement urbain? Géocarrefour, 89(1-2), 31-40.

Frantzeskaki, N. (2019). Seven lessons for planning nature-based solutions in cities. Environmental Science & Policy, 93, 101–111. https://doi.org/10.1016/j.envsci.2018.12.033

Frauenfelder, A., Delay, C., & Scalambrin, L. (2014). Potagers urbains vs jardins familiaux ? Réforme urbaine et controverses autour du beau jardin et son usage légitime. Espaces et sociétés, 158(3), 67–81. https://doi.org/10.3917/esp.158.0067

Haaland, C., & van den Bosch, C. K. (2015). Challenges and strategies for urban green-space planning in cities undergoing densification: A review. Urban Forestry & Urban Greening, 14(4), 760–771. https://doi.org/10.1016/j.ufug.2015.07.009

Haase, D. (2018). Grüne Stadt. In D. Rink & A. Haase (Eds.), Handbuch Stadtkonzepte: Analysen, Diagnosen, Kritiken und Visionen (pp. 151–168). Verlag Barbara Budrich.

Jahrl, I., Moschitz, H., & Salomon Cavin, J. (2021). The role of food gardening in addressing urban sustainability – A new framework for analysing policy approaches. Land Use Policy, 108, 105564. https://doi.org/10.1016/j.landusepol.2021.105564

Jahrl, I., & Schmid, O. (2017). The Governance of Urban Agriculture and Multifunctional Land Use in the City of Zurich. In C. Soulard, C. Perrin, & E. Valette (Eds.), Toward Sustainable Relations Between Agriculture and the City (pp. 219–235). Springer.

Jim, C. Y. (2004). Green-space preservation and allocation for sustainable greening of compact cities. Cities, 21(4), 311–320. https://doi.org/10.1016/j.cities.2004.04.004

Madureira, H., & Monteiro, A. (2021). Going Green and Going Dense: A Systematic Review of Compatibilities and Conflicts in Urban Research. Sustainability, 13(19), 10643. https://doi.org/10.3390/su131910643

Pincetl, S., & Gearin, E. (2005). The Reinvention of Public Green Space. Urban Geography, 26(5), 365–384. https://doi.org/10.2747/0272-3638.26.5.365

Rink, D. (2018). Nachhaltige Stadt. In D. Rink & A. Haase (Eds.), Handbuch Stadtkonzepte: Analysen, Diagnosen, Kritiken und Visionen (pp. 237–258). Verlag Barbara Budrich.

Rosol, M. (2010). Public Participation in Post-Fordist Urban Green Space Governance: The Case of Community Gardens in Berlin. International Journal of Urban and Regional Research, 34(3), 548-563, https://doi.org/10.1111/j.1468-2427.2010.00968.x.

Schweizerischer Bundesrat. (2001). Agglomerationspolitik des Bundes. https://www.admin.ch/gov/de/start/dokumentation/medienmitteilungen.msg-id-10624.html, accessed March 3, 2022.

Schweizerischer Bundesrat. (2012). Raumkonzept Schweiz. https://www.are.admin.ch/are/de/home/raumentwicklung-und-raumplanung/strategie-und-planung/raumkonzept-schweiz.html, accessed February 8, 2022.

Snow, D. A., & Benford, R. D. (1988). Ideology, frame resonance, and participant mobilization. International Social Movement Research, 1(1), 197–217.

Tappert, S., Klöti, T., & Drilling, M. (2018). Contested urban green spaces in the compact city: The (re)negotiation of urban gardening in Swiss cities. Landscape and Urban Planning, 170, 69–78. https://doi.org/10.1016/j.landurbplan.2017.08.016

Yin, R. K. (2009). Case study research: Design and methods. Vol. 4th ed. SAGE Publications.

PAPER SESSION 2.D DESIGN STRATEGIES FOR SUSTAINABLE FOODSCAPES

The Architecture of Sustainable University Foodscape. Design Strategies and Practices for re-shaping the Food-City Nexus

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The Architecture of Sustainable University Foodscape. Design Strategies and Practices for Reshaping the Food-City Nexus

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In recent decades food projects, practices and policies enacted by universities have multiplied, crossing the spheres of teaching, research and the third mission. However, the perspective of urban and architectural design still seems to be underestimated in this interdisciplinary and intersectoral endeavour. On the one hand, design disciplines may contribute to socio-spatial analysis, making food systems' spatial effects visible. On the other hand, design may explore scenarios, triggering or facilitating alternative food processes and practices. Thus, this contribution investigates the spatiality of food across universities, focusing on how a food system may be reshaped by sustainable design research and practice. Framing the observation between the terms 'foodspace' and 'foodscape', interweaving the material and sociocultural dimensions of food spatiality in universities, the contribution detects manifold case studies to understand how design strategies and practices may deal with the city-food nexus across contexts, scales and actors. Rethinking the architecture of their foodscapes, universities could embrace a critical role in the struggle for the right to food and the right to the city, thereby eliciting the societal transition towards a prospective sustainable future.[1]

Keywords: architecture, foodspace, university, foodscape

University between Foodspace and Foodscape. A Design Research Perspective Intersecting Food, Rights and Social Practices

In recent decades the food projects, practices and policies implemented by universities have multiplied, crossing the spheres of teaching, research and the third mission (Bartlett, 2011; Bartlett, 2017; Dansero *et al*., 2019; Classens *et al*., 2023), mobilising and intertwining spaces, actors and food habits both in the university community and in the cities and territories they inhabit. Enabling projects such as ecological and solidarity canteens, bio-restaurants and social farms, community gardens and markets go hand in hand with the renewal of food services, spreading food-related experiential learning activities and refocusing the research agenda on food systems. In virtuous cases, renewed practices trigger the implementation of universities' food policies by creating green offices and food working tables while developing visions and strategic plans to design campuses' food sustainability guidelines, monitor their achievement and make the effects visible to the university community and beyond.

This trend suggests that universities claim an empowered leadership role in the societal endeavour towards achieving the SDGs, already focused, for instance, on energy and waste, to which the lens of food joins. Universities' food systems hold an impactful and pioneering position in the broader collective food sector (Bartlett, 2011), which comprises other institutions such as schools, hospitals and prisons but also companies. Among these, universities may constitute a critical player in the conventional food system agency, comprehensively embracing their social and ethical responsibility towards the issues of food safety and food security, which call into action a renewed mission ensuring the right to education with the right to food. This tendency also seems symptomatic of a critical shift in the discourse and practice of sustainability, where food is an increasingly prominent observation lens. As the emergence of the 'food studies' field testifies, food enacts a gravitational centre of alliances and

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[1] Authorship attribution: Given that all authors contributed significantly to the conception, design, implementation and writing of this manuscript, the introduction "University between foodspace and foodscape. A design research perspective intersecting food, rights and social practices" is attributed to Valentina Rodani; the case studies' section "Exploring the university foodscape. The design of hybrid and dynamic foodspaces crossing the boundaries of food consumption, digestion, transformation, distribution and production" is co-attributed to Sara Basso and Valentina Rodani; the conclusions "Learning from the Edible University. Design Strategies and Practices to Make Visible Just, Feeding and Learning Communities" is attributed to Sara Basso.

interactions across disciplines and sectors. However, the architectural and urban design perspective still seems to be underestimated when considering the liaison between university and food systems. On the one hand, design research and practice enduringly contributed to the understanding of the spatiality of the university, its conceptualisation and design, its evolution and transformation, and its relationship with the city and territory, recalling its role in urban regeneration and societal transformation at the intersection of the right to education and the right to the city (De Carlo, 1972; Muthesius, 2000; Hoeger, Christiaanse and Bindels, 2007; Tattara, 2017); as well as to the understanding of the spatiality of food, questioning its potential in reshaping the food-city nexus at the intersection of the right to food and the right to the city (Viljoen, Bohn, Howe, 2005; Verzone and Woods, 2020).

On the other hand, it suffices to mention a general lack of design literature investigating the spatiality of universities' food systems, whether focused on spatial analysis or the principles and strategies to design it. Paradoxically enough, universities' foodspaces, such as the canteens, seem marginal in the disciplinary literature as far as they often represent the social core and everyday spatial incubator where the community gathers, social relationships nourish and ideas spread while eating. The last decades testify to some shifts in the design of the university canteen in particular and of the university's foodspaces in general. Rather than acting as islands of knowledge or ivory towers, universities are to a greater extent conceived as districts of innovation, drivers of urban regeneration and hubs of knowledge-based economy, fostering interactions across the industry, the government and the socio-ecological environment (Carayannis, Campbell, 2010; Borsi, Schulte, 2018). As the boundary between the university and the city becomes more blurred and porous (Haar, 2013; Martinelli, Savino, 2015), so does the university's foodspace emerge among the spatial thresholds to mediate this interaction.

Thus, this contribution aims to bridge these gaps by positioning architectural and urban design at the core of the reflection. Design disciplines may contribute both in terms of spatial analysis, examining and making visible the systemic spatiality of food with its respective criticalities and impacts, and in terms of design, thus exploring transformative scenarios and responding with strategies and devices capable of triggering alternative food practices according to the principles of social and spatial justice (Agyeman, 2013). The research hypothesises universities as the genius loci where the right to education intersects with the right to food and the right to the city, addressing these guiding questions: What is the spatiality of food in universities? How can design strategies and practices reshape the architecture of universities' food systems?

Exploring the university foodscape. The design of hybrid and dynamic foodspaces crossing the boundaries of food consumption, digestion, transformation, distribution and production

Framing the observation between the terms "foodspace" (O'Neal Dagg, 2014; Fodor, 2022) and "foodscape" (Vonthron *et al.*, 2020), this contribution explores the material and sociocultural dimensions of food spatiality in universities by inquiring about manifold case studies to understand how design strategies and practices may deal with the city-food nexus across contexts, scales and actors. Universities assemble a multitude of foodspaces where food is processed and consumed (from canteens to cafeterias, from collective kitchens to informal spaces), where the waste is managed (from disposal points to last-minute markets and solidarity canteens), distributed (from vending machines to minimarkets, food trucks and street food markets) and even produced (from gardens and experimental farms to food banks and forests). Concurrently, universities also generate a foodscape nourished by landscapes of agri-food production, distribution and consumption, which in turn engender landscapes of digestion (Castillo-Vinuesa, Ocaña, 2023). It seems relevant to rethink the university's foodscape, starting from one of its most institutionalised foodspace, a device to mediate the time and the space of the meal: the university canteen. Acting as a medium to spatialise welfare (Muthesius, 2000), the centralised monofunctional canteen model affected many

universities built or expanded since the Second World War by providing a low-cost meal under controlled conditions to the large masses. However, this model often engenders long waiting queues during peak times, the rigidity and monotony of kitchen operations, and intensive energy consumption and food waste. Inherent factors worsen when considering the abovementioned transformation of eating discourse and practice as much as the phenomenon of hybridisation of the boundary between university and city. Nowadays the corralled university canteen model manifests as obsolete and rigid.

By observing recent projects, despite the diversity of context and scale, it is possible to detect some evidence of the tendency to reconceptualise the university's canteen by experimenting with the design of open, plural, and dynamic, sometimes even ephemeral, university foodspaces. For instance, design projects such as Lacaton & Vassal's School of Architecture (Nantes, 2009) rethink the cafeteria as an expandable threshold to mediate the transition from the outer to the inner space, blurring further into the laboratory. Current projects also confirm the demand for foodspace flexibility. SANAA's Bocconi Campus (Milan, 2019) and ADEPT's School of Architecture (Aarhus, 2021) assemble dining convivial areas to shape the transitional space between interior and exterior, aligning the design of the spatial experience in accordance with the offered food experience. The design research for flexibility suggests the unprecedented potential of foodspace to enhance the quality of the university experience. Rather than confined spaces merely for food consumption and catering, open-ended insular dining devices compose restaurants, refectories, cafeterias, fast-food outlets and markets to reshape the boundary between the university and its context. Contemporary foodspaces enact the university-city interaction, sometimes by assembling food squares and inner streets, food courts, food gardens and parks that, overall, seem to stage a sort of food city where social encounter and the transmission of knowledge catalyse.

Nonetheless, a critical reading of these design experiences questions their capacity to face the challenge of food sustainability. On the one hand, it is urgent to understand how food spatial flexibility may contribute to ensuring the right to education in other renewed forms, whether securing the right to food or the right to the city by design. On the other hand, it also seems compelling to understand how to deal with the risk of conforming and reproducing spatial ordering according to the logic of the conventional food system market. However refined design strategies and devices may be, architectural and urban projects could contribute to a limited extent if not joining ethical commitment and alliances with the university's spatial agency and policy to address the entanglement of food, rights and socio-spatial practices in the sustainability transition.

For instance, the collaboration of GRAAL architects with the regional education rights agency, Crous, led to the university canteen's renovation and extension (Cergy-Pontoise, 2021) into a flexible and hybrid refectory offering an alternative and fresh food service while reconnecting the commons building with the public park and the city. Design research bridges here with the quest for sustainable eating habits. The corralled canteen is reshaped as a 'threshold foodspace'. It assembles a spatial sequence mediating the transition from the public terraced roof with the new kiosk to the in-between multi-use fast-food area up to the inner dining and serving area with the core kitchen. By emphasising the topographical and landscape spatial continuity connecting the city, the university refectory and the public park, the project qualifies the space and time of meal, increasing food spatial accessibility, transparency, flexibility of use and users' potential for appropriation.

Rethinking the canteen along with the food service and the public space seems an essential yet initial step for universities, who can mobilise a necessary systemic action across food didactic, research and food-related third mission practice acting simultaneously on food provisioning, consumption, disposal and education, from foodspaces to foodscapes (Zdzienicka Fanshel, Iles, 2022; Basso, Rodani, Venturini, 2024), to embark the path towards 'campus food system alternative' (Classens, Adam, Srebot, 2023; Barlett, 2011; Barlett, 2016). Thus, some following examples recommend the understanding of how the alliance of

foodspace design, food socio-spatial practice and food policy can spatially materialise not just the right to food but a broader range of citizenship rights (Rodotà, 2014) in-between the university, the city and territory.

In Turin, the project of an ephemeral design food laboratory intersects the university's teaching, action research and third mission. Initiated in 2017 within a multidisciplinary project aiming to fight food waste (Campagnaro, Ceraolo, Passaro, 2019), the Polito Food Design Lab spatialises a pop-up kitchen composed of several tools and mobile kits to experiment with food recovery and leftovers circular redistribution practices in the university and beyond. For instance, the laboratory triggers in situ participatory processes at the interface between the university and the city by activating a solidarity refectory in asylum seekers' housing. Far from reshaping the conventional food system, the project contributes to the creation and transmission of food systems knowledge across actors and sectors, mobilising the university's community, the catering service, associations and NGOs, markets and supermarkets, food professionals and chefs, local producers, up to public institutions and overall citizens, while implementing local strategies to mitigate its consequences.

In Toulouse, the design of a minimarket crosses university food supply redistribution, foodspace design and the enhancement of the public city. Starting in 2013, the collaboration of architects and designers Matali Crasset, Studio Praline and Terres Nuages with the national education rights agency, Cnous, led to the creation of Mini M in the university housing *Les Tripodes* in the peripheral and proximity food supply services lacking campus Rangueil. The minimarket materialises Cnous' democratic principles of "quality, rapidity, and equality" (Acerboni, 2013), which concurrently inform the qualitative innovation of food offers and their spatial quality. The project transforms the accessory volume of the student's residence into a hybrid and convivial foodspace, combining a market, a fast-food and a grocery. Acting as a threshold, the minimarket reshapes the relation between the inner space of the student's residence and the campus public garden, bridging the university's community and citizens. Here, thanks to the alliance among the campus gardener, Cnous, the students and a community horticulture association, the intermediate foodspace triggers the creation of a collective community garden. Even though it is a limited case, this design process highlights how universities may contribute to securing the abovementioned rights to education and food with the right to the city.

Other university design projects and practices explicitly explore collective gardening on campus as the socio-spatial practice of community making and experiential learning to make visible alternative foodscapes while bridging teaching research and third mission. In Montréal, the School of Architecture's Edible Campus project (Minimum Cost Housing Group, 2008) rethinked marginal or unused open spaces such as rooftops, impervious surfaces, balconies and transition spaces into collective community gardens whose harvest is self-consumed or redistributed to local food security NGO. Among the several edible campus projects that are currently spreading, it seems relevant to observe one of the most radical.

Rural Studio's off-campus project is emblematic in this sense because it intersects the spheres of teaching, research and third mission by constituting a design laboratory of food policies, plans and projects for a sustainable and healthy rural learning community. Founded in 1993 and permanently established in the Morrisette house in Newbern in 1996, the Rural Studio developed a corpus of incremental design experiments over thirty years that transformed a former farmhouse into a rural university community (Oppenheimer Dean, Hursley, 2002), offering an alternative model to the American campus. Since 2010, Rural Studio has created the Newbern Strategic Plan and the Morrisette Strategic Plan by building a collective kitchen conceived, designed, self-built and maintained by the students, a photovoltaic greenhouse, a workshop, a warehouse, and a seed house. The farmhouse's spatial transformations to accommodate the activities of growing, harvesting, preparing, and eating locally produced food are closely linked to the transformations of food practices and eating habits, as the students have even devised an ad hoc diet. Harvesting in situ, providing six meals a week, and CSA

(Community Supported Agriculture) combine to feed the community. Since food production exceeded the actual needs, Rural Studio begun experimenting with food surplus redistribution practices. The Black Belt Food Project is a non-profit initiative that helps feed the broader West Alabama community via various public collection points in the area (Rural Studio, 2024). Rural Studio's holistic approach, where eating, designing, and living are parallel practices, slowly but incrementally allowed the learning community to upscale its agency from food micropolitics (Dolphijn, 2004) to urban food policies, building food citizenship.

Learning from the Edible University. Design Strategies and Practices to Make Visible Just, Feeding and Learning Communities

A Strategic Role for the University, between Upscaling and Downscaling

The case studies exploration highlights how a systemic approach towards university foodspace projects can reframe them as incubators of alternative local food chains. These projects can go beyond the demonstrative and didactic character, embracing a political, social and economic impact on the agri-food system. By working between micro and macro, they can experiment with downscaling and upscaling strategies that can potentially impact conventional food systems in the long term (Barlett, 2011; Bartlett, 2017). In this endeavour, the university's role as a 'driver of change' is not just crucial but empowering. Through research, teaching and third mission activities, the university can not only become a leader in sustainable food practices. Still, it can also promote actions to enhance local knowledge and heritage. Imagining the university as an edible campus foodscape (Bhatt, 2009) thus makes it possible to reshape the relationship between the university, city and society (Martinelli, Mangialardi, 2023). Therefore, it seems urgent to rethink the spatial and political boundary between the university and the city by the design, in the sense suggested by De Carlo: "permeability means openness to the problems of the context to find questions and materials that can give an overall – and therefore substantially political – sense to university cultural work [...]" (De Carlo, 1992, 242).

What Spaces for What Rights: Food as a Welfare Spatial Device

A second understanding emphasises how university foodscape questions the spatiality of welfare. Food styles and eating habits intertwine spheres of rights for which the university is called upon to account. In the context of university education, access to healthy, secure and safe food can be related to a broadly understood right to study, i.e. not limited to an adequate education, but rather considered as a lens through which to guarantee other citizenship's rights (health, inclusion, environmental protection, etc.) and, more generally, to the right to the city. Spaces where food preparation, consumption, and disposal, as well as food education, can thus be understood as collective spaces where shared practices take place, affecting the quality of life of the entire university community and the democratic affirmation of study-related rights. Hence, design research and practice should push for reshaping the restricted monofunctionality of catering. Learning from the case study exploration, it emerges that foodspaces must be reconceptualised as places of hybrid practices linked to study, meeting, learning and beyond. They are places capable of influencing the reconceptualisation of other university spaces, such as those intended for student residences (Bellini, Gullace, 2023). Again, concerning the spatialisation of welfare, it should also be considered how projects linked to food can offer the university various opportunities to activate virtuous processes that involve local communities and, in particular, the most fragile subjects precisely through food (think, for example, of the recovery of food surpluses in which some universities are already involved, but also the opening of social bars, etc.). Promoting sustainable projects related to food processes means that universities not only take charge of themes and issues relevant to settled communities, bringing them into the groove of more general reflections and themes shared by the disciplinary community, but also initiate broader processes of involvement aimed at regenerating the common good (Cognetti, 2012) by interweaving the sphere of rights of the university community with that of the fragile subjects of the communities.

From Passive Consumers to Participating Food Citizens. Feeding University Communities of Practice and Learning

Finally, food practices and processes offer to transform the university community itself into an open learning community. Working on food processes generates opportunities for learning and experimentation through activities that are transversal to the more traditional pathways of skills acquisition, from interacting between the various territorial stakeholders (administrators, local actors, or citizens) to the possibility of using interactive and dynamic socio-spatial survey tools for food system mapping operations (questionnaires, surveys, interviews, creative practices). Activities of this kind can concretely go beyond the field to interdisciplinary comparisons, which are necessary for those who deal with cities, to structure learning communities on issues that have strategic relevance for the university and the territory (Lenning, Ebbers, 1999; Cognetti, Fava, 2019). At the same time, these activities can increase the university communities' awareness of food sustainability, fostering the transition of subjects from passive consumers to participating ones, a prerequisite for the success of policies and projects to reshape the campus foodscape towards the emergence of food citizenship. Imagining the formation of 'feeding' and 'learning communities' also offers an opportunity to return students to the centre of the reflection on changing educational pathways. This entails, first and foremost, questioning our ways of teaching and behaving towards them, as well as our ability to intercept their inclinations and turn them into genuine passions. Working between foodspace and foodscape offers spaces for action to question the relations between city and university, imagining the latter as De Carlo already advanced at the end of the 1960s by his design research and practice "an open structure, branched out in the fabric of social activities, capable of articulating itself to its continuous variations [...] unstable configuration continually recreated by the community that uses it, introducing the disorder of its unpredictable expressions" (De Carlo, 1972, 68).

Bibliography

Acerboni, F. (2013) 'Qualité, rapidité, égalité' *Domusweb*, 2 October 2013. Available at: https://www.domusweb.it/it/design/2013/10/02/matali_crasset_mini_mensa_alla_francese_.html (Accessed: 15 May 2024).

Agyeman, J. (2013) Introducing Just Sustainabilities: Policy, Planning and Practice. London: Zed Books.

Bartlett, P. F. (2011) 'Campus Sustainable Food Projects: Critique and Engagement', *American Anthropologist*, 113 (1), pp. 101-115. Available at: https://www.jstor.org/stable/41407379 (Accessed: 15 May 2024).

Bartlett, P. F. (2017) 'Campus Alternative Food Projects and Food Service Realities: Alternative Strategies', *Human Organization*, 76 (3), pp. 189-203. doi:https://doi.org/10.17730/0018-7259.76.3.189.

Basso, S., Rodani, V. and Venturini, C. (2024) 'Decostruire immaginari per ripensare politiche e progetti. Cibo e rigenerazione urbana in Friuli Venezia Giulia', in *Proceedings of XXV SIU National Conference Società Italiana degli Urbanisti: Transitions, Spatial Justice and Territorial Planning*. Conference held in Cagliari, June 15-16 2023. Planum, SIU (forthcoming).

Bellini, O. E. and Gullace, M. T. (2023) 'Urban Regeneration: "Town", "Gown", and "Student Housing"' in Martinelli N., Annese, M. and Mangialardi, G., (eds.), *Le università per le città e i territori. Proposte per l'integrazione tra le politiche universitarie e le politiche urbane*, Working papers Urban@it, 15, pp. 26-37.

Bhatt, V. *et al.* (2009) 'Making the Edible Campus: A Model for food-secure Urban Revitalization', *Open House International*, 34 (2), pp. 81-90. doi:https://doi.org/10.1108/OHI-02-2009-B0009.

Borsi, K. and Schulte, C. (2018) 'Universities and the City: from islands of knowledge to districts of innovation', *The Journal of Architecture*, 23 (7-8), pp. 1143-1180.

Campagnaro, C., Ceraolo, S. and Passaro, R. (2019) 'Fighting food waste design toward the social' In Pettenati G., Tecco N. and Toldo A. (eds.) *Atlante del cibo di Torino metropolitana. Rapporto 2*. Torino: Celid, pp. 213-216.

Carayannis, E. G. and Campbell, D. F. J. (2010) 'Triple helix, Quadruple helix and Quintuple helix and how do Knowledge, Innovation and the Environment relate To Each other?' *International Journal of Social Ecology and Sustainable Development*, 1(1), pp. 41-69. http://doi.org/10.4018/jsesd.2010010105.

Castillo-Vinuesa, E. and Ocaña, M. (2023) 'Foodscapes', *Catalogue of the Spanish Pavilion at the 18th Venice Architecture Biennale*, Madrid: MIVAU, AECID, MAEX, Fundación Arquia. Available at: https://foodscapes.es/ (Accessed: 1 June 2024).

Classens, M., Adam, K. and Srebot, S. (2023) 'Food systems change and the alternative campus foodscape', *Journal of Agriculture, Food Systems, and Community Development*, 12(3), pp. 155-176. doi:https://doi.org/10.5304/jafscd.2023.123.010

Cognetti, F. (2012), 'Le università milanesi: nuove prospettive per lo sviluppo urbano', *Urbanistica*, 149, pp. 39-42.

Cognetti, F. and Fava, F. (2019) 'La città interdisciplinare. Per itinerari non tracciati tra saperi urbani', *Tracce urbane*, 6, pp. 6-20.

Dansero, E. *et al.* (2019) *Le università e il cibo. Buone pratiche verso un'alimentazione sostenibile negli atenei*. Torino: Celid.

De Carlo, G., (1972) 'Ordine – Istituzione Educazione – Disordine. La vitalità delle culture spontanee e il ruolo del disordine ambientale – L'autogestione dei processi educativi come alternativa all'insegnamento burocratico e paternalista', *Casabella*, 368-369, pp. 65-71.

Dolphijn, R. (2004) *Foodscapes: Towards a Deleuzian Ethics of Consumption*. Utrecht: Eburon.

Fodor K. (2022), 'Design at the End of the Food System: Hybrid Foodscapes in the Realm of Consumption' In *A Research Agenda for Food Systems*, Sage C. L. (ed.). Cheltenham & Northampton: Edward Elgar Publishing, Cheltenham, pp. 243-263.

Haar, S. (2013) 'Campus and City: An Evolving Boundary', *Mas Context*, 4 March. Available at: https://mascontext.com/issues/boundary/campus-and-city-an-evolving-boundary (Accessed: 15 May 2024).

den Heijer, AC. & Tzovlas, GE. (2014), The European campus - heritage and challenges. Delft: Delft University of Technology. Available at: https://books.bk.tudelft.nl/index.php/press/catalog/book/isbn.9789081728324 (Accessed: 15 May 2024).

Hoeger, K., Christiaanse, K., & Bindels, E.C. (2007) *Campus and the city: Urban design for the knowledge society*. Zurich: GTA Verlag.

Lenning, O. T. and Ebbers, L. H. (1999) 'The powerful Potential of Learning Communities: Improving Education for the Future' *ASHE_ERIC Higher Education report*, 26 (6).

Matta, A. (ed.) (2015) 'University Campus and the City', *Famagazine Festival dell'architettura magazine*, VI, 34. doi:https://doi.org/10.12838/fam/issn2039-0491/n34-2015/70

Martinelli, N. and Savino, M. (eds.) (2015) 'University/City. Evolving conditions', *Territorio*, 73, pp. 58-107.

Martinelli N., Annese, M. and Mangialardi, G. (eds.) (2023) 'Le università per le città e i territori. Proposte per l'integrazione tra le politiche universitarie e le politiche urbane', *Working papers Urban@it*, 15.

Minimum Cost Housing Group, School of Architecture McGill University (2008) *Making the Edible Campus*. Summary Report. Available at: https://www.mcgill.ca/mchg/projects/ediblecampus (Accessed: 15 May 2024).

Muthesius, S. (2000) *The Postwar University: Utopianist Campus and College*. New Haven: Paul Mellon Centre for Studies, Yale University Press.

O'Neal Dagg, R. (2014) 'Foodspace: Communicating Physical Traces and Spatial Constructs' in *Proceedings of the Design Communication Association Conference*. Atlanta: DCA, pp: 38-43.

Oppenheimer Dean, A. and Hursley, T. (2002) *Rural Studio: Samuel Mockbee and an Architecture of Decency*. New York: Princeton Architectural Press.

Rural Studio (2024) Rural Studio Farm blog. Available at: https://ruralstudio.org/ (Accessed: 15 May 2024).

Rodotà, S. (2014) *Il diritto al cibo*. Milano: Corriere della Sera.

Tattara, M. (2017) 'Il progetto dell'università dopo Bologna' in Puddu, S., Tattara, M. and Zuddas, F. (eds.) *Territori della conoscenza: Un progetto per Cagliari e la sua università*. Macerata: Quodlibet, pp. 152-163.

Verzone, C. and Woods, C. (2020) *Food urbanism: typologies, strategies, case studies*. Basel: Birkhauser.

Viljoen, A., Bohn, K. and Howe, J. (2005), *Continuous Productive Urban Landscapes: Designing Urban Agriculture for Sustainable Cities*. Oxford: Architectural Press.

Vonthron, S., Perrin C. and Soulard, C.T. (2020) 'Foodscape: A scoping review and a research agenda for food security-related studies', *PLoS ONE,* 15(5). doi:https://doi.org/10.1371/journal.pone.0233218

Zdzienicka Fanshel, R. and Iles, A. (2022) 'Mapping Inequity: The Campus Foodscape as Pedagogy and Practice', *Frontiers in Sustainable Food Systems*, 6, pp. 1-25. https://doi.org/10.3389/fsufs.2022.759076

Gaps in urban food systems in Portugal: Lessons learned from 91 projects funded by national authorities

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Gaps in urban food systems in Portugal: Lessons learned from 91 projects funded by national authorities.

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Contemporary food systems face critical global challenges, ranging from malnutrition, obesity, resource scarcity and food waste, to the climate crisis. Rapid urbanisation exacerbates these issues, placing immense pressure on urban food systems. This research paper intends to assess the status of urban food systems in Portugal by analysing 91 food projects funded through six programs from 2017 to 2021. The study draws on an analytical tool to systematically map food projects based on five criteria: a) territorial scope; b) governance; c) area of intervention of the food system; d) Milan Urban Food Policy Pact (MUFPP) recommended actions; and e) Sustainable Development Goal (SDG) targets.

The findings indicate that: a) Projects are concentrated in 36 out of 308 municipalities in Portugal. b) Nearly half of the initiatives come from academia. c) The majority of the projects relates to food production, with other food system stages, like food services or logistics, often overlooked. d) Few projects align with MUFPP recommendations, and the "food waste" dimension is neglected. e) SDGs 2, 9, and 12 are prominent (71%), while SDG 11 is notably absent.

In conclusion, despite some promising aspects, Portugal's food projects face shortcomings, in particular the absence of a holistic food systems view and a systemic, multidimensional perspective. Additionally, the limited involvement of local governments and the lack of empowerment of civil society remain a significant challenge in this context, Local governments should play a central role and act as catalysts for food strategies. Active participation of civil society is crucial to ensure diverse perspectives shape urban food systems. This bottom-up approach strengthens resilience, making communities better equipped to tackle contemporary global challenges.

Keywords: Urban Food Systems \ Food Governance \ Funding Programmes \ Portugal \ Milan Urban Food Policy Pact \ Sustainable Development Goals

Introduction / background

Food systems in today's world have reached a point of breakdown and unsustainability.(Ellen Macarthur Foundation, 2019) There is more evidence than ever that the food system is inextricably linked to the major contemporary global challenges (Parsons et al., 2019).They are at the core of the causality behind the major negative impacts on our planet, ranging from resource scarcity and biodiversity loss to malnutrition, food waste, and the climate crisis. Yet, they also hold the potential to act as a repairer of these issues.

On the other hand, population growth and the increasing concentration in urban areas - where most consumption takes place but also where most waste is generated - lead to increased pressure on urban food systems. According to FAO data, up to 70% of the world's food supply is destined for urban consumption (FAO, 2020a, 2020b). It is of utmost importance to ensure sustainable urban food systems, considering that urban areas are characterised by an aggressive food market, and unhealthy diets. However, cities also have the power to shape society(Alemu & Grebitus, 2020) and can be areas of opportunity and enablers of food system transformation.

Recognising potential synergies between cities and food systems offers mutually beneficial opportunities. Territorial and cross-cutting approaches, with urban and spatial planning as strategic languages, become crucial in addressing these complex challenges. The Portuguese context is no exception, and these topics remain largely unexplored to date. Therefore, there is a need – and urgency – to delve deeper into this field of study.

This paper, focused on the issue of urban food systems, explores the following questions:
1. What direction and form are food projects in Portugal taking?

By analysing the state-of-the-art of funded food-focused projects, their systems, and networks, from an urban (city-region or regional) and multidimensional perspective, we aim to build a critical mass of knowledge and gain a better understanding of the situation in Portugal.

2. What are the gaps of Urban Food Systems in Portugal?

The main objective of the research is to assess the status of urban food systems in Portugal by analysing 91 food projects funded through six programs from 2017 to 2021. The goal is to systematically map these projects, identify their food system intervention focus and territorial location, analyse their governance models, and assess their alignment with international agendas.

By addressing these research questions, this paper aims to contribute to a better understanding of the status and characteristics of urban food systems in Portugal, identifying areas for improvement and opportunities for further development. The findings can inform policymakers, practitioners, and researchers on the current landscape and potential pathways for strengthening sustainable and resilient urban food systems in the country.

Methodology and Sample

As a first step, to select the samples, we conducted a comprehensive mapping and selection of relevant funding programs. As a baseline we took all recent programs carried out by Portuguese entities that could be related to food systems. After the research, nine funding programs were selected as they met the named requirements. After initial contacts by email and telephone and following an in-depth search, six programs were selected for the final sample as they met the defined criteria, namely: being recent programs (2017–2021), addressing topics related to food, sustainability, and food systems, promoting partnerships between multiple actors, and having an innovative and exploratory character. The six selected programs were: *Sustentabilidade on Call; Support for demonstration in irrigation water management; Collaborative Laboratories; R&D projects in all scientific domains; Promove Program; and Recovery and Resilience Program*. The remaining three were not selected, either because they did not fulfil the requirements (*Environment Program and National Circular Cities Initiative Program - InC2*), or because was impossible to obtain any information or to contact the relevant entities (*Portugal Participatory Budget and Social Impact Program*). From the 6 selected programmes, we identify 91 projects as case studies for this research.

In parallel, we drew on an analytical tool (AT) designed for this purpose based on a review of reference documents, such as the Milan Urban Food Policy Pact Monitoring Framework (MUFPP-MF) and the e-book "Feeding Good Practices – from production to sustainable consumption" (Delgado, 2020a). This AT allowed us to map the projects in a systematised manner, enabling the introduction, processing, and analysis of the data according to five sets of criteria: a) territorial scope; b) governance; c) food system intervention area; d) MUFPP recommended actions; and e) Sustainable Development Goals (SDGs) targets. This approach enabled us to present multidimensional results that capture the nuances of the Portuguese context, while also ensuring the adaptability of the tool to other territories.

Mapping food systems initiatives is vital for rethinking public policies and consolidating best practices (Delgado, 2020b). Measuring their impact, however, remains a significant challenge (FAO; RUAF, 2019). Our research focused on a specific subset of projects financed by national programs, leaving many other initiatives beyond the scope of this analysis. Understanding the importance of funding sources and channels, as well as the functioning and rules governing these funds, is crucial for ensuring the short- and medium-term sustainability of food system initiatives, particularly in the highly subsidised Portuguese context (European Commission, 2019). This is why we chose to focus our case studies on co-financed projects, believing this dimension is key to evaluating the current state of urban food systems in Portugal. While our model may need further refinement, it serves as a robust foundation, contributing to the construction of more sustainable and resilient local food systems from social, economic, and environmental perspectives.

Results and discussion

a) The analysis of projects' territorial scope involved two distinct criteria: the location of the project's area of activity, by NUTS II and the headquarters location of the main project promoter, by municipality. figure 1 shows that out of the 91 initiatives analysed, 25 are located

in the Centro region, 24 in the Norte, 17 in the Alentejo, only 3 in the Algarve, and 3 in the Lisbon Metropolitan Area (AML). Figure 2 shows a geographic dispersion of project promoters, only 36 of the 308 Portuguese municipalities host the headquarters of an initiative, which represents roughly 10% of the existing municipalities.

[fig.1] Project's area of activity by NUTS II   [fig.2] Headquarters of Project Promoters by Municipality
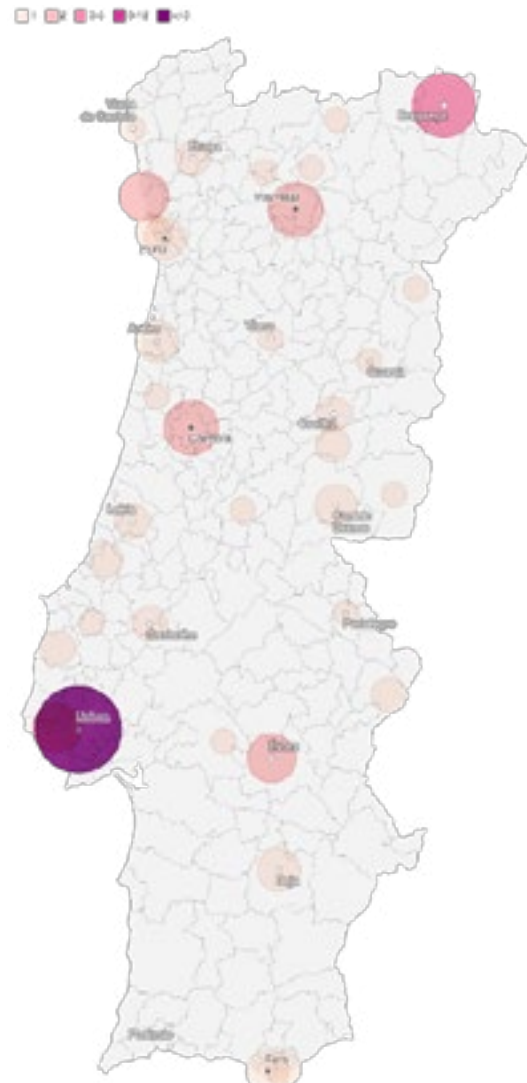
elaborated by the author

The four municipalities with the highest number of project promoters (30 out of 91) are Lisbon (13), Bragança (7), Coimbra (5) and Vila Real (5), strongly linked to the academic sector. Oeiras, Évora and Vila do Conde with 4, and Porto, Aveiro, Beja, Castelo Branco, and Faro with 3 each. There are ten municipalities, that have two project promoters each, while the remaining fifteen municipalities have only one project promoter each. The contrast between the concentration of project promoters in Lisbon (17) and the small number of projects operating in the AML itself (only 3) is noteworthy. The results show that the Autonomous Regions of the Azores and Madeira have no representation in the analysed projects.

b) The analysis of the social sector and subsector affiliation of the project promoters is presented in figure 3. The primary sector is the most prominent, accounting for 50 project promoters. This is largely due to the high representation of the academia, which comprises 43 project promoters. The secondary sector, representing the private market, is the less represented, with only 11 project promoters. The tertiary sector has 30 project promoters. The associations/networks subsector is the second most prominent in total, accounting for 24 project promoters. All other subsectors represent fewer than 6 project promoters each,

including SMEs (5), NGOs (4), large enterprises (3), startups and foundations/institutes (2 each), and local government and cooperatives (1 each). Figure 3 shows a predominance of the public sector in the coordination of the food initiatives, to the detriment of greater involvement of local authorities and organised civil society.

[fig.3] Social Sector of the Project Promoters.
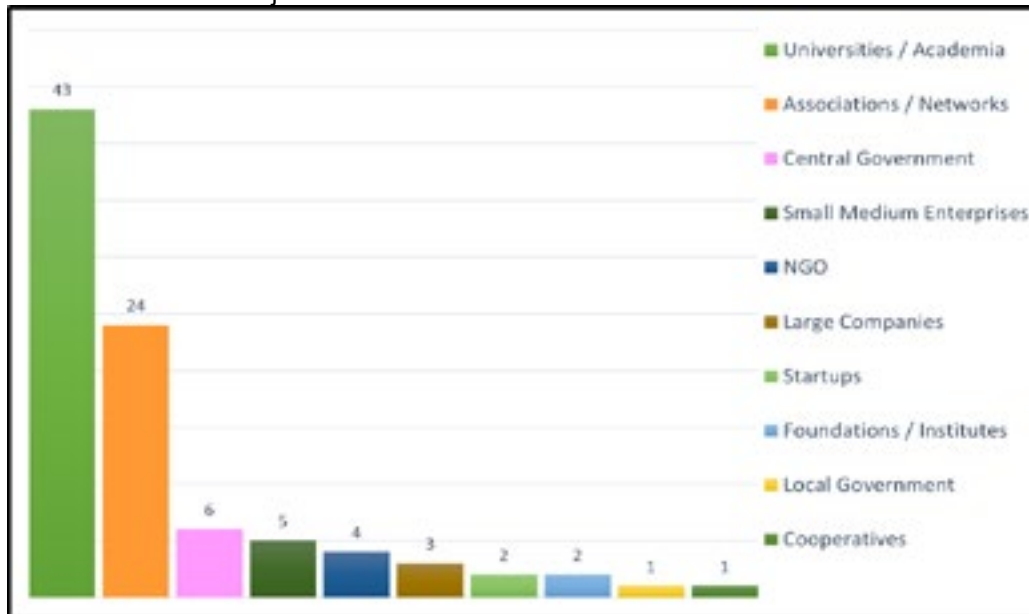
[fig.4] Food system intervention areas addressed by the projects.
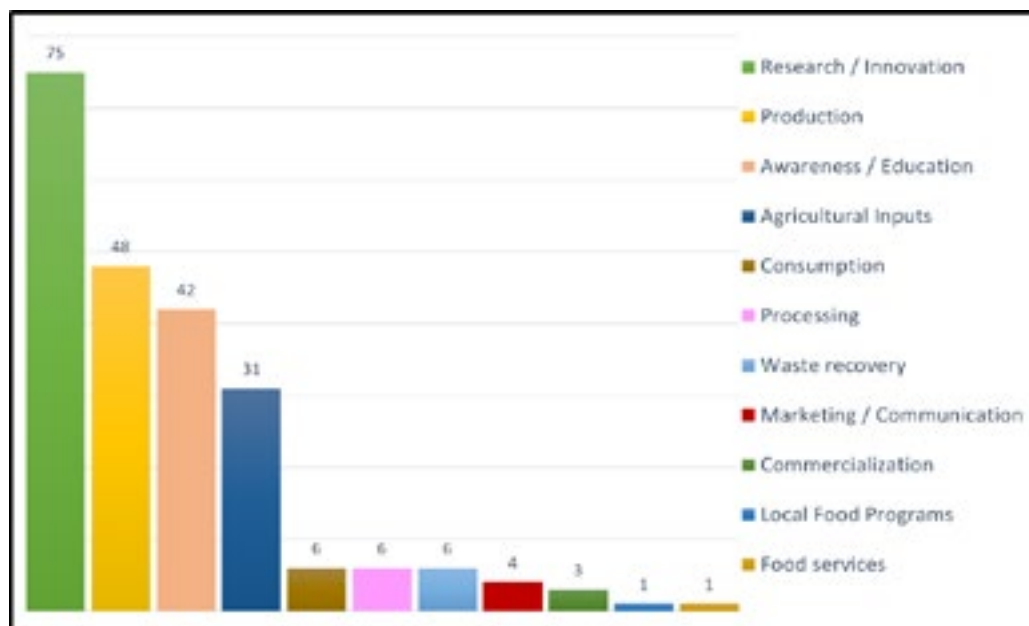
elaborated by the author

c) Figure 4 reveals a predominance of research/innovation (27%), followed by production (17%) and awareness/education (15%). On the other hand, areas such as consumption, processing and waste recovery have very low representation. Notably, logistics did not have any representation.

d) Figure 5 shows that 40% of the possible recommended actions from MUFPP were not addressed by the projects, as they were considered as unclassified. The food production dimension is the most represented (27%), followed by economic and social equity (18%). On the contrary, the dimension of food waste is the least present (2%).

[fig.5] MUFPP Recommended Actions addressed by the projects.
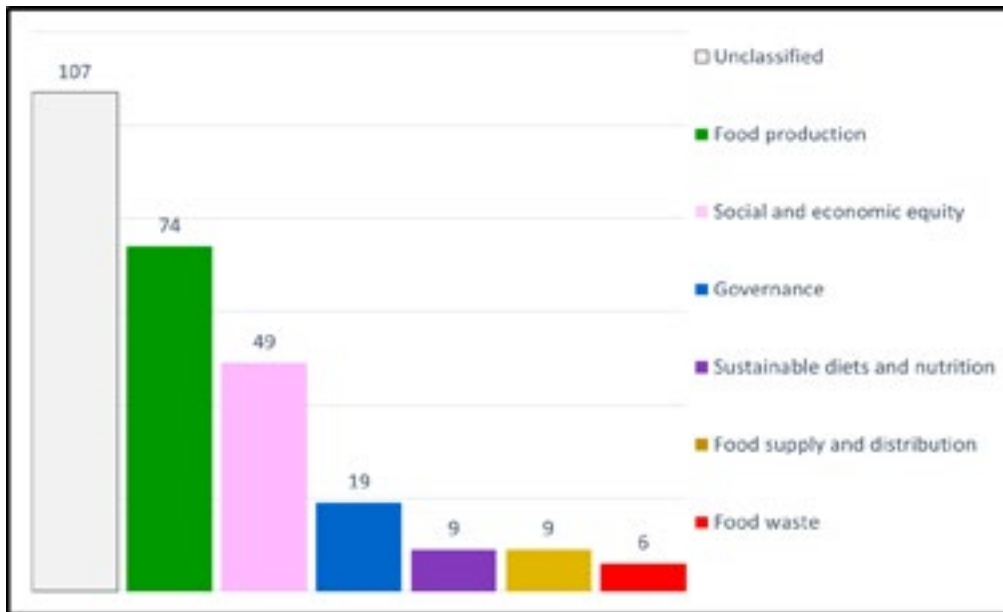
e) The analysis of the Sustainable Development Goals targets, presented in figure 6, shows that SDG 2 – Zero Hunger stands out, with 35% of the total occurrences. This is followed by SDG 9 – Industry, Innovation, and Infrastructure (17%) and SDG 12 – Responsible Consumption and Production (15%). On the other hand, SDG 11 – Sustainable Cities and Communities has almost no representation, accounting for only 0.4% of the total.

[fig.6] Sustainable Development Goals Targets addressed by the projects.
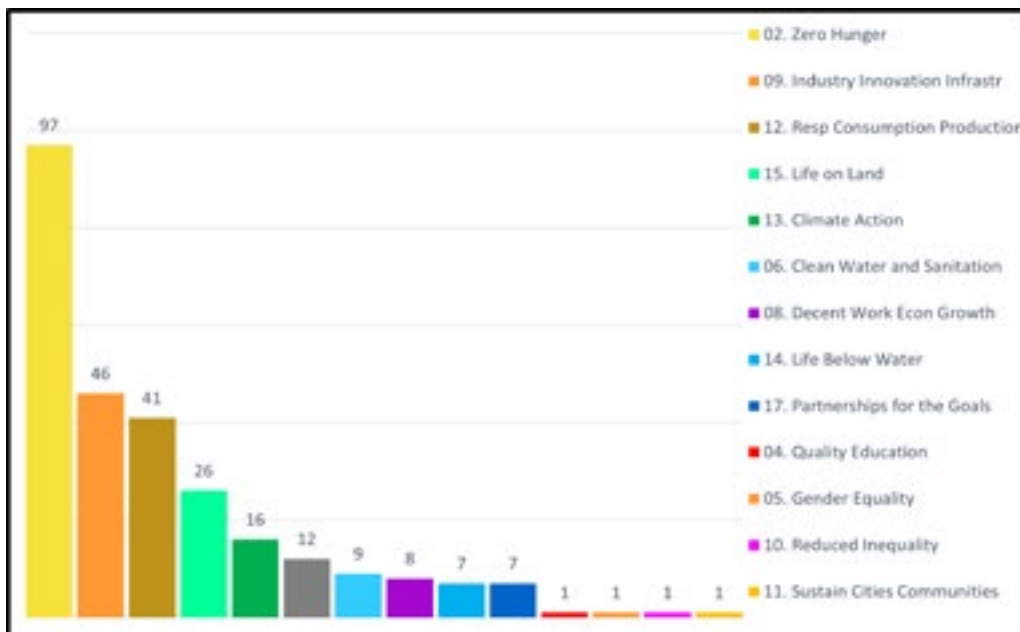
elaborated by the author

Our findings indicate that: a) Projects are concentrated in 36 out of 308 municipalities in Portugal, emphasising the country's highly centralised approach to leading initiatives and allocating funds. b) Nearly half of the food initiatives were coordinated by universities. In contrast, the limited involvement of local authorities and organised civil society suggests a lack of systemic and integrated vision of urban food systems, converging with the previous conclusions by Delgado (Delgado, 2020b). c) There is a predominance of initiatives in the research/innovation stage (27%), and a persistence in food production (17%), while other

stages of the food system, are often neglected, converging with the previous conclusions from the study Food Systems - Research and Innovation Investment Gap Study(Chandler et al., 2022). d) Few projects align with the MUFPP recommended actions, indicating a lack of a multidimensional perspective and vision for Urban Food Systems. e) Predominance of initiatives addressing SDGs 2, 9, and 12 (71%), while SDG 11 is notably absent. This could indirectly reveal a lack of vision on Urban Food Systems, as we also detect that, unfortunately, SDG 11 does not have any targets related to food. These several trends highlight a polarised and unbalanced vision of urban food systems in Portugal. Such a narrow, sectorial perspective fails to capture the full complexity and interconnectedness of food systems, underscoring the need for a more holistic and integrated approach to address the challenges faced.

Conclusions

Returning to our initial research question – what direction and form are food projects in Portugal taking? – our findings are consistent with those of Delgado and Calvário. They underscore that, in recent years, food has gained increasing importance in public policies. Moreover, the current favourable situation presents an opportunity for formulating, implementing, and institutionalising food policies in Portugal, both locally and nationally. Particularly, local authorities have a unique opportunity to serve as facilitators in constructing "common visions" aimed at enhancing the resilience of food systems in their cities. They can play pivotal roles by mapping existing local initiatives developed by other actors, thus broadening the understanding of the food system and catalysing municipal food strategies (city-city region). The waste system can serve as a pivotal entry point to facilitate this transformative shift.

This trajectory undoubtedly involves empowering civil society to take proactive roles and advocating for the centrality of academia. Academia plays a fundamental role in empowering food system actors, raising awareness, and enabling discussions. Furthermore, a collaborative approach between research, political power, and civil society is imperative for horizontal governance. Such collaboration can contribute to the development of evidence-based food policies through comprehensive analyses of the existing food system and proposals for actionable recommendations. Crucially, this all requires targeted training to access national and international funding sources, essential for ensuring the short and medium-term sustainability of initiatives.

Back to our second research question – What are the gaps of urban food systems in Portugal? – Despite the promising aspects of food projects in Portugal, there are several gaps that Urban Food Systems in the country present:

1. Lack of a holistic vision of food systems and absence of a multidimensional perspective. Although there are numerous initiatives underway, robust public food policies that systematically consider the different actors and sectors within the food system are still lacking.

2. Local governments should be central players in developing municipal and inter-municipal food strategies, co-created with the participation of all stakeholders. However, their involvement remains limited.

3. Insufficient empowerment of civil society is a key gap. Food system projects often involve complex, non-linear initiation and decision-making processes. Empirical examples from cities like Milan and Brussels highlight the important role that the third sector can play alongside local governments in addressing sustainable development challenges. However, research suggests that Portugal lags other countries in this regard. Strengthening civil society participation through this bottom-up approach fosters active engagement, enhances community resilience, and ensures that diverse perspectives shape urban food systems.

Addressing these gaps presents a window of opportunity to rethink food systems with a holistic approach that treats food as a right of territories and people, placing the care of life and people at the centre of our values and practices.

Bibliography

Alemu, M. H., & Grebitus, C. (2020). Towards sustainable urban food systems: Analyzing contextual and intrapsychic drivers of growing food in small-scale urban agriculture. PLoS ONE, 15(12 December). https://doi.org/10.1371/journal.pone.0243949

Cabannes, Y., & Marocchino, C. (2018). Food and urban planning: the missing link. Em Integrating Food into Urban Planning. UCL Press. https://doi.org/https://doi.org/10.2307/j.ctv513dv1

Calvário, R., & Castro, I. (2022). A questão alimentar em Portugal: (des)encontros entre políticas públicas, alternativas alimentares cidadãs e a agricultura familiar. Análise Social, LVII(3o), 570–593. https://doi.org/https://doi.org/10.31447/as00032573.2022244.06

Chandler, Caroline., Figueiredo, Diogo., Francisco, I., Franke, Jan., Magalhães, Hugo., Mastrogregori, Elena., Milhazes, Catarina., Schneuwly, Sonja., Zanobetti, Leonardo., Goncalves, Raquel., European Commission. Directorate-General for Research and Innovation., IPSOS., & SPI. (2022). Food systems: research and innovation investment gap study research : policy paper.

Cohen, N. (2022). Roles of Cities in Creating Healthful Food Systems. Annu. Rev. Public Health, 43, 419–437. https://doi.org/10.1146/annurev-publhealth

Delgado, C. (2020a). Alimentar Boas Práticas - Da Produção ao Consumo Sustentável 2020. CICS.NOVA - Centro Interdisciplinar de Ciências Sociais. FCSH, Universidade Nova de Lisboa.

Delgado, C. (2020b). Local food policies - Their constraints and drivers: Insights from Portuguese Urban Agriculture initiatives. Moravian Geographical Reports, 28(3), 223–235. https://doi.org/10.2478/mgr-2020-0016

Delgado, C. (2023b). The role of land as the central piece to sustainable food systems: Lessons learned from Portugal national food-related policies. Geography and Sustainability, 4(1), 84–90. https://doi.org/10.1016/j.geosus.2023.01.001

Ellen Macarthur Foundation. (2019). Cities and Circular economy for Food.

European Commission (2019) EU Expenditure and Revenue 2014-2020 [Online] Available at: http://ec.europa.eu/budget/graphs/revenue_expediture.html

FAO. (2020a). Ciudades y los gobiernos locales a la vanguardia en la construcción de sistemas alimentarios inclusivos y resilientes. https://bit.ly/2x1B7yI

FAO. (2020b). Urban food systems and COVID-19: The role of cities and local governments in responding to the emergency. http://www.foodpolicymilano.org/en/food-aid-system/

FAO; RUAF. (2019). The Milan Urban Food Policy Pact Monitoring Framework: A practical handbook for implementation.

Parsons, K., Hawkes, C., & Wells, R. (2019). Brief 2: Understanding the food system: Why it matters for food policy.

Seto, K. C., & Ramankutty, N. (2016). Hidden linkages between urbanization and food systems. Em Science (Vol. 352, Número 6288, pp. 943–945). American Association for the Advancement of Science. https://doi.org/10.1126/science.aaf7439

Steel, C. (2020). Sitopia - How Food Can Save the World. Chatto & Windus.

Verzone, C., & Woods, C. (2021). Food Urbanism. De Gruyter. https://doi.org/10.1515/9783035615678

Willett, W., Rockström, J., Loken, B., Springmann, M., Lang, T., Vermeulen, S., Garnett, T., Tilman, D., DeClerck, F., Wood, A., Jonell, M., Clark, M., Gordon, L. J., Fanzo, J., Hawkes, C., Zurayk, R., Rivera, J. A., De Vries, W., Majele Sibanda, L., … Murray, C. J. L. (2019). Food in the Anthropocene: the EAT–Lancet Commission on healthy diets from sustainable food systems. Em The Lancet (Vol. 393, Número 10170, pp. 447–492). Lancet Publishing Group. https://doi.org/10.1016/S0140-6736(18)31788-4

PAPER SESSION 2.E
URBAN FOOD
IN TIMES
OF CRISIS

Transforming Food Systems in Lebanon: A Tale of Two Alternative Food Models in the Time of Crisis

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Transforming Food Systems in Lebanon: A Tale of Two Alternative Food Models in the Time of Crisis

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This study presents a comparative analysis of two distinct non-governmental organizations (NGOs) in Lebanon, the Lebanese Organization for Studies and Training (LOST) and Jihad Al-Binaa (affiliated with a political party), and their innovative responses to the country's post-2019 crises in developing socio-ecologically just food systems. LOST's community farm in Baalbeck has evolved from a project-based approach to an agri-food incubator, supporting over 3000 farmers on a regional level with plans for replication in other regions. Jihad Al-Binaa's response to the crisis involved expanding its efforts nationwide, promoting food sovereignty, and advocating for an environmentally responsible alternative economy. Benefiting from their political affiliation and long history, they focus on enhancing proximity between consumers and producers by developing direct marketing channels, networking, and boosting local production. This model contributes to a just and equitable food system and holds the potential for systemic change.

The research methodology encompassed a mixed-methods approach conducted in two phases. Data were first collected in the summer of 2022, involving semi-structured interviews with diverse stakeholders. The second phase in the summer of 2023 included participatory observation, further interviews, and social media analysis. This approach provided a comprehensive and evolving understanding of each initiative's strategies, impacts, and scaling up.

Both models exemplify the integration of food into local development models, in which civil society actors can play the role of mediators in addressing immediate needs for equitable food access while laying a foundation for a healthy environment. They highlight how crises can spark alternative food models for local development. The findings offer insights into scaling up innovative alternative food models in crisis contexts, providing lessons in resilience, adaptability, and planning relevant to sustainable food systems globally. The study aims to contribute to understanding the challenges and opportunities of alternative food planning for just and sustainable food governance, offering valuable lessons for integrating food into local development during crises.

Keywords: Crisis, Alternative Food Models, Food Justice, Lebanon

Introduction

Since October 2019, Lebanon has been subject to radical crises that have exacerbated its food system challenges. In addition to the COVID-19 pandemic, the collapse of the banking system caused limited access to savings and affected the purchasing power of the people. Political instability, regional crises, and the influx of Syrian refugees further weakened Lebanon's economy and food supply. The current crises have intensified the concerns about the insecurity of the food sector at both the national and sub-national levels as the main indicators started to follow an alarming trajectory. Mukahhal et al. (2022) argued that the absence of institutional reforms has significantly impacted the socio-economic security of all, specifically the lower-middle class, foreign domestic workers, producers, and traders. Within this context, vibrant civil society organizations have stepped in to fill the void left by the collapsing public institutions. These organizations have been central in developing innovative models addressing agri-food issues which can be identified as an alternative to the existing mainstream. The disruptions caused by socio-economic and geopolitical transformations in the socio-technical regime created a place for innovative initiatives to intervene thus creating a potential for a more sustainable food transition, diverging from mainstream approaches.

This case isn't unique, it aligns with the increasing interest in developing "alternative" models for a just and sustainable food system in response to the ongoing "food crisis". The global food system, backed by finance capital, corporate interests, and governments fixated on 'neoliberal efficiencies' (Dixon and Richards, 2016), is being criticized due to its role in increasing socioeconomic inequalities; urban-rural and producers-consumers disconnection; as well as negative impacts on sustainability (Baldi et al., 2019; Forssell and Lankoski, 2015).

The COVID-19 pandemic further exposed its systemic weaknesses and fragility by disrupting the global food supply chains raising new questions about food security and resilience (Atalan-Helicke and Abiral, 2021). Moreover, "Alternative food models" are widely seen as a response to these concerns and are conceptualized as holders of transformative potential toward a more just, equal, and sustainable food system.

Lebanon can be seen as a laboratory for developing and experimenting with new planning practices targeting urban issues, including food. Verdeil (2018) considered Lebanon not an exceptional place escaping common theorizations, but rather a place to criticize, deepen, and renew the dominant paradigms. The case of Lebanon can contribute to the academic and professional debates within the field of urban studies, and more broadly the construction of the social sciences not only in Arab countries but also in the Global South (Verdeil, 2018). The case of Lebanon illustrates the dependence of a small country on both global trends in the transformation of science and the arising role of bottom-up approaches in the production and codification of practical knowledge about urban planning, including the food sector. Thus, this paper explores how two Lebanese local development NGOs— LOST and Jihad Al-Binaa— were able during radical crises to enhance their innovative initiatives and scale up their impact through an approach centered on food justice. This paper aims to contribute to ongoing discourse about the role of alternative food models in developing innovative practices in crisis contexts and how social and ecological justice dimensions can be integrated into food planning.

Crises, Food Governance, and Scaling Up Movements for Food Justice

Several scientists have studied how "moments of crisis" taking several forms have influenced the evolution of the food system and the related urban policies either by creating transitions and transformations thus creating new food regimes (Banerjee and Hysjulien, 2018; Dixon and Richards, 2016; Mukahhal et al., 2022). Banerjee and Hysjulien (2018) argued how food injustices and crises are revealed during the crisis in global food supply and become potential pivots for transformation. By affecting the established norms of the food systems and producing food risks, it led to new production relations that will consequently establish themselves. The interest in innovative initiatives emerging in food planning in Lebanon during crises, combined with the changes they bring through their interactions with each other and with dominant practices and processes in this field, makes the frameworks from sustainability transition studies, urban food governance, and innovation theory indispensable.

The works of sustainability transition studies (Serrano et al., 2021) share a common focus on sociotechnical systems, their components, and their evolutions as structuring elements of transitions towards greater sustainability and the forms they take. The Multi-Level Perspective (MLP) remains the sustainability transition studies framework most used in the study of food transitions. Moreover, MLP has been criticized for being too focused on technology and not paying enough attention to social and ecological aspects, often for overlooking how power dynamics and socio-political contexts influence transitions. To address these limitations, The Analytical Framework for Urban Food Governance developed by Moragues-Faus et al. (2022) and social innovation theory will be integrated with the MLP to analyze the two innovative models and their scaling up during crises.

The MLP focuses on understanding the interactions and evolution between these three levels: the niches (spaces for innovation), socio-technical regimes (established practices and rules), and socio-technical landscapes (broader contextual factors) (Geels, 2002). From a bottom-up perspective, it helps to understand how innovative initiatives maintain or transform into emerging regimes or modify existing regimes. Conversely, from a top-down perspective, it describes how changes imposed by the crises at the landscape level influence regimes creating an opportunity for the niches to scale up.

Moragues-Faus et al. (2022) developed a critical analytical framework to help understand urban food governance and provide pointers on how urban food governance can deliver

sustainability, justice, and food security outcomes. The framework consists of five key dimensions: Time (historical and future-oriented perspectives), Place (place-based approaches relevant to specific geographic and cultural contexts), Relations (interactions among stakeholders), Diversity (inclusion of diverse theories and practices), and Power (addressing power dynamics and social inequalities). This framework provides a more holistic approach that will support overcoming the MLP's limitations and understanding urban food governance by integrating the five key dimensions.

Social innovation is defined as innovations in social relations and meeting human needs, characterized by three interrelated features: satisfaction of human needs, reconfiguration or improvement in social relations, and empowerment or political mobilization (Moulaert et al., 2014). According to Moragues-Faus et al. (2022), there is recognition and consensus that social innovation is a critical lever for urban food governance. Social innovation will be an additional layer to understanding the innovations and 'acts of change' developed by alternative food models to transform social structures and empower communities thus achieving food justice.

In conclusion, crises can be seen as moments within the socio-technical landscape that cause disruptions within socio-technical regimes, driving change within the mainstream food system and creating gaps for niche-innovative initiatives to develop and scale up their impact. This study utilizes a combination of the MLP, Social Innovation, and the Analytical Framework for Urban Food Governance to analyze how civil society organizations in Lebanon were able to develop socially innovative food initiatives and scale up their alternative model during crises.

Lebanon's Transition: The Rise of Alternative Models During Crises

The current crises have intensified the concerns about the insecurity of the food sector, as key indicators have begun to follow an alarming trajectory. Amid the collapse of public institutions, a vibrant civil society has stepped in to fill this void by developing innovative models to ensure equitable access to food and promote food security. The development strategies and the hybrid governance have influenced the development of this void.

Since 1950, Lebanon has transformed from self-sufficiency in agriculture to a reliance on food imports. This transition has been influenced by global food regimes and external forces such as international agricultural markets, trade agreements, and the role of international aid and development agencies (Mukahhal et al., 2022). Driven by significant geopolitical events, these transitions have coincided with periods of instability and power struggles, affecting food supply chains and prompting changes in food policies. Swyngedouw (2005), citing Maarten Hajer, suggests that within situations where we have an 'institutional void' and 'destatization,' new governance arrangements emerge, reshaping the relationships between the state, civil society, and the market.

Lebanon has become a vibrant terrain for civil society organizations to mobilize over urban issues, significantly contributing to policy reforms and advocacy planning. Since 2000, they started tackling agri-food issues largely driven by political parties, mainly Hezbollah, and the flow of external funding. Infused by 30 years of civil war, sectarian political parties relied on welfare distribution, including food aid, to strengthen communal bonds and secure political loyalty. Hezbollah, the political party best known for its role as the "Islamic Resistance" in Lebanon, has emerged as a main actor in local development and has initiated several development associations, including Jihad Al-Binaa. They worked on agricultural development mainly in the areas affiliated with them. On the other hand, international funding has played a crucial role, with various global organizations stepping in to support the agricultural sector by providing services, vocational training, and food parcels. This support increased following the Syrian crisis, as many Syrians were allowed to work in agriculture. In addition, local initiatives, such as LOST, have upgraded their strategies to secure funding due to the growing competition and limited international funding,

Due to the crises, CSOs have developed different strategies to address food insecurity such as providing emergency food aid, ecosystem protection initiatives, or agricultural development. Some organizations adopted a more holistic approach, using project-based interventions like LOST's community farm, or addressing food sovereignty and rural development, like Hezbollah's national program.

Methodological Approach: Case Studies and Data Collection

In this study, we adopted a case-study approach to analyze two significant cases, LOST and Jihad Al-Binaa. They were chosen after mapping 50 cases based on their sociological profiles, types of interventions, scale, and geographical coverage, allowing for an in-depth comparative analysis to identify common themes and patterns. Data collection occurred in two phases, in summer 2023 and 2023, for around 2 months each. The initial phase involved semi-structured tackling the organizational profiles and structure of each NGO, their agri-food interventions, discourses and representations regarding the food crises, and networks. The interviews were conducted with key stakeholders related to each model (initiators, implementing partners, target audiences, donors, and municipal authorities). The second phase aimed to explore the impact of these cases. This was done through participatory observations, interviews with the operational team, and focus groups with beneficiaries. For data analysis and coding, ATLAS.ti software was used.

Lebanese Alternative Models for Food Justice during Crisis: The Case of LOST and Jihad Al-Binaa

In the context of the radical crises, two local development NGOs had an impact on the food system. They upgraded their strategies and developed innovative and scalable models: the Community Farm Model by LOST and the Alternative Markets Model by Jihad Al-Binaa. Both organizations have leveraged their unique resources and knowledge of the local context to address food insecurity, support local producers, and promote sustainable agricultural practices. The following will provide an insight into their strategies, interventions, and the broader implications for socio-ecologically just food systems in Lebanon.

The Community Farm Model by LOST

LOST is a local NGO established in 1998 to create an equitable society through socio-economic projects targeting vulnerable communities in the Baalbek-Hermel Governorate. Being present in one of the main agricultural areas in Lebanon, LOST started working on agricultural development in 2015, after receiving land as a gift and responding to requests from local farmers. Their strategy has evolved especially after the crises to create an agricultural hub and incubator of 3000 farmers in the Baalbeck region only.

During the crisis, LOST secured additional funding from international organizations by focusing on food security. They established a community farm to create a hub and incubator to support local farmers and enhance the agricultural sector in Baalbeck. They promote the production of traditional Lebanese food known as Mounee, strengthen social relationships with producers, create marketing channels for local products, and provide a space for enhancing agri-food knowledge and skills. In addition, they developed networks with key stakeholders in the region, including municipalities, political parties, public institutions, private companies, and both local and international organizations…

In brief, they work on empowering local producers by organizing cooperatives, providing training and in-kind support, and coaching from a team of experts over agroecological practices. The farm is composed of different areas: a nursery to produce seedlings which are either to be provided for local farmers or sold at reduced prices; an educational area consisting of an agri-food academy to develop the capacity-building of local producers and a seed library to preserve local varieties; recreational area including a restaurant, cinema, safe zone for children, and a guest house to enhance agro-tourism; marketing area to exhibit the products of producers which is fixed market within the farm, events and farmers' markets; as well as an

employment center to link producers with job opportunities either inside the farm or outside. Besides, they are working on branding the farm's products in the surrounding urban areas, and they initiated civil companies to develop agro-industrial incubators (cheese and dairy; Grains and feed…) to provide post-harvest services.

Within this period, LOST became a hub for agri-food producers in the region. They were able to earn the trust of different stakeholders, particularly locals and producers. Their strategic planning and community involvement have positioned them as a leading marketing entity in the region. In the future, the NGO aims to achieve zero-waste emissions and a self-funding farm, using the farm as an experimental hub to encourage sustainable practices to replicate the farm model in other areas.

The Alternative Markets Model by Jihad Al-Binaa

Jihad Al-Binaa is a local development NGO established in 1988. They focus on sustainable development by supporting underprivileged areas through reconstruction, agricultural support, and infrastructure projects. Hezbollah considered the crises as part of the geopolitical blockade, and "food" is being used as a weapon to weaken them. As a result, they initiated a holistic approach under the name "Agricultural and Economic Jihad" in July 2020.

The NGO was responsible for developing and implementing the "Alternative Markets" program. The vision focused on enhancing rural development and food sovereignty through two complementary dimensions. The first dimension focuses on preserving the general landscape, including natural resources and the environment. They highlight the divine balance of the environment while drawing on Islamic teachings to encourage conservation and responsible resource use. They developed awareness sessions and social media campaigns to promote sustainable practices.

The second dimension focuses on creating direct links between rural producers with urban consumers. As a result, they initiated different marketing channels such as static markets (annual exhibitions, supermarket stands, and touristic destination markets), mobile markets (farmers markets), and showrooms supported by Hezbollah. On the production side, they promoted the production of mounee and supported local sustainable agriculture, through in-kind support, tutoring cooperatives, vocational training, and educational activities. On the consumption side, they are supporting the most vulnerable population by distributing food aid and subsidized cards to be used inside showrooms.

Jihad Al-Binaa has benefited from its strong resources (including human and financial resources), its political capital, and the trust people have in them, as well as their well-established networks (internally and externally) to impose a systemic change within the food system. Their geographical coverage focuses on agriculturally rich regions like the Bekaa, South, and North, where they have strong political capital. They work to connect these rural areas to urban centers, particularly the southern suburb of Beirut, fostering fair trade for small and medium producers and the vulnerable population. They are planning to expand their geographical cover towards the remaining cities in Lebanon, and they are developing an e-marketing platform in coordination with the Ministry of Agriculture to engage all agri-food products and facilitate exportation procedures.

In conclusion, the two cases developed different innovative alternative food models. They benefited from the disruptions caused by the crises within the socio-technical regimes to create a potential for systemic changes on both regional and national levels. In response to the economic crises, there was a significant shift in consumers' preferences towards local and cheap products. The 2 models have capitalized on this change by promoting and marketing traditional Lebanese food and sustainable agricultural practices. The focus was providing affordable and locally produced food, to ensure equitable access to food.

Discussions

Alternative food models are conceptualized as holders of transformative potential toward a more just, equal, and sustainable food system. Lebanon provided a vibrant terrain for the development of such innovative initiatives. The radical crises have sparked the development of innovative initiatives by civil society organizations targeting food justice. The cases of LOST and Jihad Al-Binaa illustrate the potential for developing an alternative model to the productivist and export-oriented approach toward food planning in Lebanon.

The 2 NGOs have succeeded in scaling up their impact by leveraging their profiles, established structures, and resources to expand their reach and implement their strategies. Their scaling-up process involved gaining trust and building legitimacy through networking with key stakeholders, developing a deep understanding of the supply chain, adopting experimental learning processes, and fostering knowledge development about agroecological practices. Despite the obstacles, they showed how their resilience and adaptability during crises have been key to their success and integration within the regime. Both NGOs have mobilized in regions with vulnerable populations, addressing local needs through innovative and holistic approaches. These efforts can be linked with food justice, a concept that emphasizes equitable food systems and marginalized communities' control over food production (Cadieux and Slocum, 2015).

Despite initial clashes, the two NGOs found a way to coordinate and work together in the Baalbeck region, where both are active. As Moragues-Faus et al. (2022) argue, innovations can result from collective and creative learning processes and the mutual exchange of knowledge. The success of these models, both regionally and nationally, provides an example of how food can be integrated within local development initiatives during crises. Besides, it highlights the role of civil society in developing alternative food models in crisis contexts and how social and ecological justice dimensions can be integrated into food planning.

Bibliography

Atalan-Helicke, N. and Abiral, B. (2021) 'Alternative food distribution networks, resilience, and urban food security in Turkey amid the Covid-19 pandemic,' Journal of Agriculture, Food Systems, and Community Development, pp. 1–16. https://doi.org/10.5304/jafscd.2021.102.021.

Baldi, L. et al. (2019) 'How alternative food networks work in a metropolitan area? An analysis of Solidarity Purchase Groups in Northern Italy,' Agricultural and Food Economics, 7(1). https://doi.org/10.1186/s40100-019-0139-3.

Banerjee, D. and Hysjulien, L.V. (2018) 'Understanding food disasters and food traumas in the global food system: A conceptual framework,' Journal of Rural Studies, 61, pp. 155–161. https://doi.org/10.1016/j.jrurstud.2018.04.011.

Cadieux, K. and Slocum, R. (2015) 'What does it mean to do food justice?,' Journal of Political Ecology, 22(1). https://doi.org/10.2458/v22i1.21076.

Dixon, J. and Richards, C. (2015) 'On food security and alternative food networks: understanding and performing food security in the context of urban bias,' Agriculture and Human Values, 33(1), pp. 191–202. https://doi.org/10.1007/s10460-015-9630-y.

Forssell, S. and Lankoski, L. (2014) 'The sustainability promise of alternative food networks: an examination through "alternative" characteristics,' Agriculture and Human Values, 32(1), pp. 63–75. https://doi.org/10.1007/s10460-014-9516-4.

Geels, F.W. (2002) 'Technological transitions as evolutionary reconfiguration processes: a multi-level perspective and a case-study,' Research Policy, 31(8–9), pp. 1257–1274. https://doi.org/10.1016/s0048-7333(02)00062-8.

'Governance Innovation and the Citizen: The Janus Face of Governance-beyond-the-State on JSTOR' (no date) www.jstor.org [Preprint]. https://www.jstor.org/stable/43197219.

Moragues-Faus, A. et al. (2022) Handbook of Urban Food Governance. Routledge.

Moulaert, F. et al. (2014) The International Handbook on Social Innovation: Collective Action, Social Learning and Transdisciplinary Research. Edward Elgar Pub.

Mukahhal, W. et al. (2022) 'Historical Construction of local food system Transformations in Lebanon: Implications for the local food system,' Frontiers in Sustainable Food Systems, 6. https://doi.org/10.3389/fsufs.2022.870412.

Serrano, J., Tanguay, C. and Yengué, J.-L. (2021) 'Le rôle des collectivités locales dans la gouvernance alimentaire : le cas du projet alimentaire territorial de Tours-Métropole-Val-de-Loire,' AgEcon Search [Preprint]. https://doi.org/10.22004/ag.econ.335338.

Verdeil, É. (2018) L'émergence des études urbaines au Liban Engagements critiques locaux et mondialisation des pratiques académiques. https://hal.science/hal-02436236.

PAPER SESSION 2.F
EXPERIMENTING WITH
URBAN FOOD
GOVERNANCE

The role of evaluation and learning in innovative food governance

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The role of evaluation and learning in innovative food governance

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There is a pressing need to create more resilient food systems that allow people to produce and consume more sustainable food. With a proliferation of food projects, programmes and diverse initiatives to that effect, how do we know what works, for whom and under what circumstances? Given that food systems are complex and evaluation is at times seen as a tick-box exercise, how can it usefully inform policy? This paper reflects on experiences from co-designed evaluation of partnerships seeking to transform UK food systems. Food Power (2017 - 2021) supported food poverty alliances to tackle food poverty through locally coordinated action. Resilient Green Spaces was a multi-partnership programme delivering six collaborative pilots in the re-localisation of food systems. Working alongside practitioners and throughout these projects raised strategic questions about the role of evaluation in transforming food systems. We explored these at a stakeholders workshop bringing together actors across evaluation: researchers, private and public sector representatives, third sector organisations and engaged food citizens. This highlighted challenges limiting the potential for evaluation to inform transformation.

We suggest two process-oriented aspects of evaluation, valuable beyond the immediate measurement of impact. First, we will show how evaluation can provide an impetus for meaningful personal and organisational reflection to inform project delivery and strategic planning. Holding a space for contemplation is crucial during multiple food crises, pressuring private and public organisations to focus on delivery. However, we indicate how organisational longevity and resources may limit this potential. Second, evaluation is an important tool for cross-organisational peer learning with the potential to enhance collaborations and work more efficiently. But again, this potential is often constrained by organisational capacity and features of the policy regime within which they operate. We conclude by highlighting implications for the role of researchers seeking to enable food system transformation through evaluation.

Keywords: evaluation, co-production, food governance, learning, policy transfer

The role of evaluation and learning in innovative food governance

Introduction

There is a pressing need to create more resilient food systems that allow people to produce and consume more sustainable, healthy food. In Wales, UK, the reliance on global supply chains combines with poverty and rising costs to drive food insecurity, directly impacting people's mental and physical health whilst causing intense environmental harm (Coles-Riley et al., 2023). We also know that a thriving agri-food sector is essential for the survival of rural communities, Welsh language and culture. A growing number of producers seek to produce more sustainably, whilst community-led initiatives proliferate and innovate, targeting wide-ranging food issues. The government has supported strategic local food partnerships operating at wider scales and has sought to coordinate community-level activity (Adlerova et al., 2024).

The proliferation of projects, programmes, and initiatives makes it important to know what works, for whom, and under what circumstances, particularly within a context of squeezed public finances. How do we know which pilots should be scaled or replicated and which interventions to halt? These questions indicate a key transformational role for evaluation of activity seeking to improve food systems. There is no consistent definition of evaluation or consensus on how or whether it differs from research (Wanzer, 2021); our perspective aligns with that common across evaluators, regarding it as research with a purpose - helping programs, policies, or organizations (Mason and Hunt, 2019).

Evaluation has been identified as necessary for policy transfer, helping to understand whether something worked and why, "establishing causality – as a basis for transferring effective knowledge beyond that specific instance" (Byrne, 2013, 218). Policymakers often seek

solutions known to have worked elsewhere (Dolowitz and Marsh, 2000). The movement of policies between jurisdictions – policy transfer – is fundamentally a learning process in which policymakers draw on experiences from elsewhere to avoid starting anew (Marsh, Sharman, 2009). However, processes of identifying and applying good practice are poorly understood, and best practice is seldom taken up and applied in new contexts (Bulkely, 2006). There is no agreed way of determining what counts as a 'successful' policy (Marsh and Sharman, 2009) and a tendency to under-examine what went wrong or what didn't work (Tenemos and McCann, 2013). And yet evaluation is a well-established component of publicly funded activity, with funders and policymakers typically requiring third parties to report on their impact. This presents a potentially rich source of learning about what works – or not – which can struggle to influence policy. Attention to how policies actually move between places and administrations finds the process far from logical implementation of objective information flows but messy and personality-driven (Peck, 2011). This suggests a need for a relational perspective which considers solutions within contexts where they emerge and are enacted amongst policy regimes shaped by actual people (Peck, 2011). Our findings indicate some realities of policy mobility processes, which hinder learning from best practice despite the rich vein of evidence evaluations provide.

In October 2023, we held a workshop with actors across the Welsh evaluation ecosystem – practitioners, independent and academic evaluators, engaged citizens and policymakers - exploring the role of evaluation in changing food systems. This surfaced several challenges: firstly, difficulty embedding evaluation in food-related projects due to short-term funding, shaping short-term projects where evaluation may become more of a tick-box exercise, summarising outputs rather than understanding change or impact. We heard that organisations lack time to investigate evidence available or that new projects have to be proposed according to funders' deadlines, which do not always allow scope to reflect on previous work. Relatedly, evaluations often focus on individual initiatives targeting specific scales and/or components of the food system rather than seeking systemic change. Food systems are complex, and a single project - a food pantry or a community garden - will struggle to evidence systemic impact. Evaluation of interventions in complex systems should recognize that causality is always difficult to trace, as outcomes may be generated in multiple ways (Byrne, 2013, 219). Finally, practitioners reported a lack of capacity and skills to disseminate learning and to investigate its impact once reports enter the 'black hole' of policy making. Participants' views also resonated with what Moragues Faus and Marceau (2019) identified as persistent methodological issues, including a lack of clear definitions of what is (and is not) sustainable food, inadequate qualitative and quantitative data, and a diversity of approaches that prevent aggregation from understanding the national or global impact.

Despite these challenges, we suggest two process-based aspects of co-designed evaluation that are valuable beyond the immediate measurement of impacts on food system transformation: namely enabling reflexivity and facilitating peer learning. We propose that attention to these adds important insight into how ideas for transforming food systems move and why evidence of the 'best' approaches struggle to influence actors elsewhere. By co-designed evaluation, we mean research where practitioners work closely with evaluators from the beginning of a project or even during inception, for example, to develop an evidence-informed theory of change. Researchers support and guide practitioners in thinking about data collection for monitoring activity and impact. Learning is shared to continually inform activity rather than capture it once it is complete. This approach can also develop practitioners' capabilities and confidence to gather evidence in future. Co-design might be judged to jeopardise the potential for an 'independent' assessment of project impacts. Still, we believe its potential for richer learning, which can inform action-reflect cycles, outweighs this risk, particularly given the virtual impossibility of objectively demonstrating causality for any intervention in complex food systems.

Insights shared in this paper are drawn from our experiences as researchers evaluating two programmes in the UK. Food Power was a four-year programme led by Sustain and Church

Action on Poverty, funded by the National Lottery Community Fund (2017-2021). It aimed to strengthen local communities' ability to reduce food poverty through solutions developed locally, and through a focus on tackling root causes. The approach centred on local alliances, giving voice to those experiencing food poverty, and peer exchange to build national action. Researchers from Cardiff University worked as partners for the project duration, delivering annual surveys of local alliances, workshops, and qualitative case studies focused on specific locations or modes of activity. The team worked with alliances to develop a tracker to explore their collective impact (see Knowles et al., 2021). Resilient Greenspaces was a £1.27m partnership led by Social Farms & Gardens (SFG) to pilot alternative re-localised food systems across Wales, using communities and their green spaces as the driving force (2021-2023). It piloted six initiatives targeting issues, including land access for new entrant farmers, training provision for agroecological farming, and community management of allotments and orchards (see Adlerová et al., 2023). Next, we detail two key learnings regarding the potential for evaluation to inform food system transformation.

Evaluation as an impetus for meaningful personal and organizational reflection

Holding a space for contemplation and reflection is crucial, especially in a time of multiple food crises, pressuring public and non-profit organisations to focus on delivery. If done throughout the project, it can immediately inform delivery and future strategic planning. In our experience, it was facilitated by holding spaces for practitioners to reflect individually or collectively on project processes and outcomes and gathering feedback from beneficiaries. For example, annual evaluation reports to Food Power shared insights from people with lived experience involved in the programme, which suggested they may become overburdened with activities, whilst financial and logistical arrangements did not work for them. These insights allowed Food Power to change the delivery of the 'experts by experience' workstream across subsequent years. This was possible because of the program's inherently reflective and adaptive approach and the intention of evaluators to act as critical friends and provide constructive feedback. It also depended on program length – multiple years of delivery left space to reflect-act-reflect. Nevertheless, through co-designing a collective impact evaluation tool (Knowles et al., 2021), we have also learned that some alliances favour outcome measurement and evidence of impact and may resist or deprioritise evaluation with a process focus. In other words, some alliances were less interested in understanding the nature of collective action, for example, and more interested in how many fewer people are hungry as a result of their work.

In contrast, RGS, as a shorter initiative, struggled to adapt to feedback. There was also some indication that mid-term evaluation only told practitioners 'what they already knew' from their observations and internal reflections. This was likely exacerbated by evaluators' struggle to gather views beyond beneficiaries with positive stories to tell. For example, a workstream focusing on establishing and improving orchards wanted feedback on the first round of the grant application process to improve the second round, but the evaluation failed to engage more than one non-successful applicant. That said, another workstream formed a local authority learning partnership around land use because of an evaluation activity during an early event, which became a key delivery mode. The value of reflexivity can be hindered by limits on organisational learning and memory, for example, through frequent staff turnover. This is particularly relevant in the context of projectivization (Adlerova 2024), which can limit activities due to short-term funding and tight deadlines. Food Power's entire staff team of five left the coordinating organisation at the project end. In contrast, some RGS partners had core staff working on the project or were able to engage them on other projects where they could apply learning. For example, Open Food Network - one of the partners - used Theory of Change tools developed by the evaluation team to design and evaluate a new project.

Evaluation for peer learning and collaboration

The October 2023 workshop discussions underscored the value of evaluation in providing risk-averse policymakers with confidence that an activity or approach is worth pursuing. One local authority representative shared that they had used project evaluations as evidence to demonstrate to the authority that an idea was working elsewhere, thereby securing support. This scenario illustrates a classic policy transfer situation in which evaluation proves something is worthy of emulation. However, our experiences also highlight that other modes of peer learning, beyond evaluation, may be equally if not more significant in fostering relationships and trust among partners and stakeholders.

In both case study projects, a function of evaluation activity was to bring together partners and stakeholders to exchange experiences and engage in reflective learning. For RGS, the value of this convening became apparent during the mid-way evaluation workshop, which was the first opportunity for all participating organisations to meet in person post-pandemic. Delivery was already underway, but discussions during the workshop highlighted that previously, people had not really understood what other parts of the project were doing or aiming for. The chance to meet resulted in a shared understanding of how parts of the project fit together, connecting into a comprehensive vision for a resilient food community. Time for informal conversations fostered personal relationships and appreciation of each partner's priorities. Insight to other organisations enabled partners to cross-refer community groups and were valued as the basis for future collaboration; partners reported greater confidence to champion each other and to avoid duplicating activity or competing for resources.

This example indicates the value of enabling peer learning whilst highlighting that the role of evaluation is not simply to indicate what activity is worth learning from or detailing lessons to be applied elsewhere. In this case, the evaluation team acted as impartial facilitators, fostering relationships and trust. Discussions with stakeholders across the evaluation process suggest this function may be more prevalent and productive than a focus on transmitting evidence, as multiple barriers prevent organisations from implementing best practices recommended via evaluation.

Why evaluation struggles to inform food system transformation

Stakeholders across the evaluation ecosystem highlighted issues limiting evaluation's potential to influence action that could transform food systems, particularly around effectively informing policy. As noted above, various contextual constraints exist, particularly for the third sector or other actors dependent on grant funding. The piecemeal nature of evaluation activity delivered project by project means it lacks a systematic view of change. Stakeholders suggested merit in devoting resource to reviewing all recent food focused evaluation findings from Wales, to enable a strategic overview of potential routes to change, but this is not currently within any organisations' remit or capacity. Concern with access to funding also shapes actors' aversion to sharing failure or less positive lessons for fear of jeopardising future support and investment or because evaluators struggle to capture views from more critical voices.

Third-sector organisations also highlighted their lack of skill or capacity to effectively communicate what evaluation had revealed, meaning learning does not reach those who could act on it. This was exacerbated by a lack of insight into what happens when policymakers receive evaluation reports and how they use them to inform policy – or not. It shows that actors only have insight into policy transfer processes from their own position in the system. A key outcome of the October 2023 workshop was a shared commitment to cooperating more to develop a shared understanding of the role of evaluation.

Conclusion

Our reflections suggest that evaluation is a meaningful way for researchers to contribute to food system transformation, albeit not necessarily in ways which may be envisaged as facilitating policy transfer. The case studies demonstrate the value of embedding researchers within projects as critical friends able to facilitate reflexivity and learning early on. Whilst some food system actors may have skills and capacity to collect evidence and reflect on delivery processes, academic researchers can bring specialist knowledge and confer additional credibility, providing they are prepared to emphasise goals benefiting practice. However, there remains a need for food system actors to be more open and transparent about evaluation processes and how they inform policy – or not. The potential for evaluation to inform change is only as systemic as the activity being evaluated. Where interventions remain confined to particular locations or aspects of the food system, learning is similarly piecemeal; an important counter would be a strategic review of the sum of all evaluation findings. In light of these challenges, a key role for academics might be to facilitate more exchanges between people across the evaluation ecosystem to exchange perspectives, build connections and trust.

Acknowledgements

Bibliography

Adlerová, B. Pitt, H. Sanderson Bellamy, A. (2023) Resilient Green Spaces Final Evaluation Report.. https://www.farmgarden.org.uk/resources/resilient-green-spaces-evaluation-report-june-2023

Adlerová, B, Food Sense Wales and Office of the Commissioner for Future Generations. 2024. Feeding progress: the role of public bodies in advancing sustainable food system in Wales. Report. https://www.foodsensewales.org.uk/app/uploads/2024/05/Feeding-Progress_EnglishReport_March24.docx.pdf

Adlerová, B. (2024) Cooking, caring, campaigning: making space for lived experience in food governance across scales. Cardiff University. PhD thesis.

Bulkeley, H. (2006) Urban Sustainability: Learning from Best Practice? Environment and Planning A: Economy and Space, 38(6), pp. 1029-1044. https://doi-org.abc.cardiff.ac.uk/10.1068/a37300

Byrne, D. (2013) Evaluating complex social interventions in a complex world, Evaluation 19, pp. 217-228

Coles-Riley, J., Notman, G., Tilley, H., Bristow, D. and Thornton, J. (2023) How could Wales feed itself in 2035? Evidence Pack. Welsh Centre For Public Policy

Dolowitz, D.P. and Marsh, D., (2000) Learning from abroad: The role of policy transfer in contemporary policy-making. Governance, 13(1), pp. 5-23.

Knowles, S. Nicol, P. Pitt, H. Adlerová, B. Williams, A. (2021) Food Power: Final Evaluation Report https://www.sustainweb.org/reports/food-power-final-evaluation-report/

Marsh, D. and Sharman, J.C. (2009) Policy diffusion and policy transfer. Policy studies, 30(3), pp.269-288.

Mason, S., & Hunt, A. (2019) So What Do You Do? Exploring Evaluator Descriptions of Their Work. American Journal of Evaluation, 40(3), pp.395-413. https://doi.org/10.1177/1098214018767049

Moragues-Faus, A and Marceau, A. (2019) Measuring Progress in Sustainable Food Cities: An Indicators Toolbox for Action, Sustainability 11, no. 1, pp. 45. https://doi.org/10.3390/su11010045

Peck, J. (2011) Geographies of policy: From transfer-diffusion to mobility-mutation. Progress in human geography, 35(6), pp.773-797.

Temenos, C. and McCann, E. (2013), Geographies of Policy Mobilities. Geography Compass, 7, pp. 344-357. https://doi.org/10.1111/gec3.12063

Wanzer, D. L. (2021) What Is Evaluation?: Perspectives of How Evaluation Differs (or Not) From Research. American Journal of Evaluation, 42(1), pp. 28-46. https://doi.org/10.1177/1098214020920710

Navigating Governance Dynamics in Alternative Food Networks: A Case Study of 'La Ceinture Aliment-Terre Liégeoise' in Liège, Belgium

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Navigating Governance Dynamics in Alternative Food Networks: A Case Study of 'La Ceinture Aliment-Terre Liégeoise' in Liège, Belgium

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This paper studies governance dynamics in the transition towards alternative food systems, focusing on the case study of 'La Ceinture Aliment-Terre Liégeoise' (CATL) as an Alternative Food Network (AFN) in Liège, Belgium. Through a case study approach, it aims to understand how governance tensions were navigated during the scaling process of the CATL. The paper conceptualize AFNs as social innovations. They evolve in a hybrid sector, a dynamic sector at the intersection of the public, market, and community sectors, where governance tensions inherent to the existence of different social orders emerge. They are stemming from discrepancies between public/private, for-profit/non-profit, and formal/informal institutions. The literature identifies hybrid governance tensions to be organisational, institutional, and resource related. This research aims to shed light on how these tensions impact the evolution of AFNs and, in particular, how the CATL coped with such challenges in its scaling process. The research shows that the way in which governance tensions are addressed impacts the development of AFNs. Notably, the CATL employed networking and flexibility as effective coping mechanisms, helping them to scale. These findings contribute to the understanding of how AFNs can effectively navigate governance challenges, ultimately paving the way for successful transitions in the food system.

Keywords: Hybrid Governance, Alternative Food Networks, Transformative Social Innovations, Scaling

Introduction

Following an observation of food sovereignty decline in Liège, Belgium, and noticing a rising number of initiatives trying to re-localise the food system, some actors realized there were few connections between such initiatives. This led to the creation of a network to adopt a common strategy with greater transformative potential. Since November 2013, the initiative 'La Ceinture Aliment-Terre Liégeoise' (CATL) has been working to re-localize the food system. Instead of developing its own distribution channels, the CATL aims to network existing actors to promote local food consumption and production. They create tools, methods, and projects, facilitate new initiatives, and raise awareness about local food consumption. Since its creation, it has significantly developed, facilitating the creation of over 20 new cooperatives. The number of market gardeners has more than doubled in the region, and public authorities have increasingly supported food transition projects. The CATL is considered an exemplary sustainability transition initiative by various Belgian institutional actors (Feyereisen et al., 2017).

Such Alternative Food Networks (AFNs) challenge the traditional agri-industrial food system and operate under a different paradigm, which Wiskerke (2009) describes as being based on different definitions of food quality, reflecting various farming systems, cultural traditions, and consumer preferences. The small and local scale of AFN projects often limits the transition to a sustainable food system, making their scaling mechanisms crucial. Upscaling, or the 'transformative potential' of niche initiatives (Hajer et al., 2015), aims to increase the uptake, growth, or replication of these initiatives (van Doren et al., 2016). Those scaling mechanisms involve governance aspects, including market mechanisms, community values, and institutional dimensions that need to be studied to understand AFNs transformative potential.

This research aims to integrate and apply theoretical knowledge about AFNs' scaling processes and conduct empirical research using a case study (Yin, 2009). By understanding and analysing governance dynamics, the goal is to evaluate the current situation and offer recommendations for AFNs' scaling processes. The research investigates how governance dynamics shape the development of the CATL as an AFN, and identifies mechanisms to cope with governance tensions, providing insights for other regional AFNs. The paper first presents an analytical framework based on a literature review of AFNs and Transformative Social Innovations (TSI). Then, it explains the research design. Finally, it applies the analytical

framework to analyse the governance tensions and coping strategies in the CATL scaling process. The conclusions offer recommendations on identifying and coping with tensions to foster AFNs scaling.

Analytical Framework

AFNs aim to transition from the agri-industrial paradigm to an integrated territorial agri-food paradigm, emphasizing local production and consumption. This shift involves new conventions where the price and the standardized quality norms are not the only market driving forces, but trust, tradition, place, and civic engagement, along with social justice and environmental sustainability, influence the market (Goodman et al., 2012). New governance dynamics emerged, including personal values next to price and quality norms. Additional mechanisms, such as new alliances, organizational forms, networks, and interests, have emerged in AFNs supply chains. The roles of the different organizations and institutions are important to understand governance dynamics of socially innovative action (González and Healey, 2005). Examining AFNs' scaling processes through these governance mechanisms reveals their transformative potential and impact on current food systems, highlighting alternative norms, codes, and practices (Manganelli et al., 2020).

To do so, this paper adopts a TSI perspective, which includes changing governance dynamics as well as the interaction between actors to study social innovations. TSI's are ideas, objects, or practices that challenge, alter, or replace dominant institutions. They challenge social relations by involving new ways of doing, knowing, organizing, and framing (Avelino et al., 2019, Chilvers and Kearnes, 2015, Haxeltine et al., 2015, Pel et al., 2020, Strasser et al., 2019). Because they concern social relations, TSI involve numerous actors playing important roles in transition, calling for an in-depth analysis of the different relations existing between them. To understand how these actors exercise power and influence transitions, Avelino and Wittmayer (2016) suggest a multi-actor perspective using the welfare-mix model. Developed by Pestoff (1992) and adapted by Evers and Laville (2004), this model distinguishes four sectors in society: the state, the market, and the community, but also a hybrid sector, which arises at the intersection of at least two established sectors [fig.1]. Three axes delineate the main sectors' boundaries: formal / informal, profit / non-profit, and public / private, which emerge from different natures and social orders of the sectors (Pestoff, 1992). The hybrid sector lies in the middle of those boundaries, mixing different social orders. Examples include non-profit social enterprises, cooperatives, or social entrepreneurship activities (Birch and Whittam, 2008).

[fig.1] The Welfare Mix Model, adapted from Evers and Laville (2004)

Using hybrid governance theories, Manganelli et al. (2020) analyses socio-political dynamics of AFNs. Hybrid governance recognizes that governance involves interaction, not just co-existence or competition between different governance structures (Andrée et al., 2019, Manganelli et al., 2020, Colona and Jaffe, 2016). To understand AFNs' hybrid governance, Manganelli et al. (2020) identifies four forms of governance: relations based on solidarity or affective relations; self-governing networks with reflexive and horizontal coordination; a top-down hierarchical coordination such as the state or formal institutions; and market-driven governance (Jessop, 2011). These governance types coexist and interact. For instance, AFNs' governance dynamics are driven by extra-market forces, solidarity, and self- organization (Manganelli et al., 2020). However, AFNs also interact with other institutions, facing market mechanisms, competition, public or private funding, civil society participation, and external regulations. These interactions create tensions due to conflicting values and differing social orders.

These observations are in line with the welfare-mix model, which also identify four sectors in society [fig.1]. The top-down hierarchical coordination is reflected in the state sector, the solidarity or affective relations type of governance in the community sector, the market-driven form of governance in the market sector, and the self-governing networks with reflexive and horizontal coordination in the hybrid sector. Both frameworks converge in the identification of different governance systems, which interact with each other and create some tensions due to conflicting social orders. The hybrid sector exists in a 'tension field', where it is influenced and impacted by the market, the communities and the state (Fyfe, 2005, Evers, 1995). AFNs therefore imply changing social relations and blurred boundaries between sectors. They develop in the hybrid sector, sometimes interacting with the market, the community, and the state, resulting in the emergence of tensions.

When analysing AFNs' development in the context of hybrid governance, Manganelli et al. (2020) identify three major governance tensions: organizational, institutional, and resource-related. Organizational tensions arise from balancing the bottom-up nature of AFNs with the need for logistics and professionalization, which can reduce participatory and horizontal aspects (Mount, 2012). Institutional tension occur when AFNs aim at exercising an influence on policies and values of food systems. They also arise from the divergences between the interests of institutions and corporate markets and the interests of bottom-up initiatives (Sage, 2014). Despite their grassroots nature, AFNs need institutional support to develop and integrate into the broader socio-political context, leading to institutional tension, as AFNs require support from the institutions they aim to change. Resource-related tensions emerge when scaling up with the resources that are available at the local level (Angotti, 2015). AFNs need resources like land, funding, material, an human capital, and knowledge, forcing interaction with the socio-institutional system, whose aims and values may not align with those of AFNs (Manganelli et al., 2020).

The tensions can either hamper or foster the development of AFNs, depending on how they are coped with. By analysing the relations between the actors, and understanding how tensions are addressed, this research aims to evaluate the situation and provide recommendations for scaling AFNs. While social innovations can challenge the dominant system, they can also be themselves influenced by it (Haxeltine et al., 2017). For social innovations to significantly impact the existing system, they must develop sufficient power. The way governance tensions are coped with affects the scaling process of these initiatives and therefore their transformative impact. To analyse how governance dynamics impacted the scaling of the CATL as an AFN, this research conceptualizes AFNs as evolving in the hybrid sector. We use the welfare-mix model combined with the hybrid governance perspective on AFNs suggested by Manganelli et al. (2020) which identifies specific governance tensions arising from their hybrid governance nature. By examining the boundaries between sectors and interactions between actors, we can identify where tensions emerge. Subsequently, organizational, institutional, and resource tensions reveal why such conflicts arise. This combined framework provides a deeper understanding of the CATL's success in adapting and transforming relationships with actors

from different sectors during its scaling process. It also offers a nuanced analysis of various tensions identified in AFNs. Consequently, the framework helps understand the successful scaling of the CATL through the lens of hybrid governance.

Research Design

To understand the governance dynamics influencing AFNs' scaling, qualitative methods were applied through a case study approach (Yin, 2009). Despite criticisms regarding particularism of case studies for social enterprise (Pel et al., 2020), they provide a deep understanding of complex systems and interconnect real-life factors. This approach facilitated an in-depth analysis of the CATL's governance and scaling potential. Initially, the CATL's development was analysed via document analysis, literature review, and interviews with key actors. Subsequently, in-depth semi-structured interviews and a qualitative questionnaire were conducted to gain insights from the CATL stakeholders and discern potential governance tensions. The welfare-mix model [fig.1] and the governance tensions identified by Manganelli et al. (2020) helped to structure the interviews and questionnaires. Nonetheless, the open-ended formulation of questions and semi-structured interview allowed for spontaneous answers and follow-up comments. Some answers from the questionnaires led to follow-up interviews. In total, seven interviews were conducted and 44 answers to the questionnaire were included in the analysis. Additionally, attendance at conferences and events as observers enabled to gain insights into the network dynamics and relations with different actors, and to get informal contact with stakeholders. Attendance at the CATL 2021 general assembly allowed for direct observation of the progress made and internal decision-making system.

Data from interviews, questionnaires, meeting documents, observations, and historical research underwent thematic coding aided by a codebook. The codebook was useful to formalize the operationalization of the codes, which enabled to extract meaning from descriptive data (DeCuir-Gunby et al., 2011). Following an abductive method (Tavory and Timmermans, 2014), some codes were derived prior to the analysis and based on concepts from the theoretical framework. Other codes emerged through open coding to highlight recurring themes and patterns.

Results

First, tensions between formal and informal orders emerged as the CATL started as a citizens' initiative, in an informal setting. To receive its first subsidies to launch the project, the CATL network had to formalize. Nonetheless, after a subsidy refusal in 2014, the CATL had to formalize further by, for example, focusing on job creation or designating a single organization to receive subsidies. The informal and voluntary structure was identified as a burden, and formalization and professionalization of the initiative led to better management and more concrete actions. Later, the CATL established its own legal structure, formalizing its objectives and decision-making processes through administrative bodies.

Second, tensions between public and private orders emerged. At first, there was some mutual distrust between public authorities and the CATL. The tensions came from the perceived role of public authorities. An advisor from the municipality expressed that initiating changes in the food system was not their role, but that they could rather support such initiatives, which contribute to public benefits. When the CATL asked for subsidies, it struggled to justify its public value as a private initiative, thus job creation was its main justification for funding. Over time, however, the CATL demonstrated its public value by manifesting its expertise and networking capabilities, leading to public sector collaboration. Public authorities began to recognize that Alternative Food Systems (AFS) were important to citizens and part of territorial management, acknowledging the CATL's expertise. Today, 50% of the survey respondents believe they have influenced public authorities to develop local food systems, and 58% feel included in public decision-making regarding local food.

Third, tensions between profit and non-profit orders were identified, mainly concerning the relationship between agro-industrial food production and local or small-scale producers. Supermarkets often buy products at prices insufficient for producers, creating tensions. However, not all producers want to be integrated in supermarkets, as they want to keep their extra-market values and prioritize smaller local retailers. For instance, a local honey producer and a potato producer refused supermarket offers due to imposed market constraints, such as dictated pricing and required constant quantities. Supermarkets also conflicted with their local and social values. They thus preferred selling to local shops, allowing them to set fair prices based on their production capacity and to keep their extra-market values. Profit is not the only motivation for producers in AFNs. For example, the potato producer donated part of their production to food banks without making profit, and the honey producer engaged in educational activities to raise awareness about ecology and the role of apiculture in biodiversity. This highlights that social and local values are central to AFNs. The CATL recognizes the need for shorter supply chains that keep the extra-market values of AFNs. It connects various supply chain actors and supports cooperatives by reducing unnecessary margins in the food chain and facilitating direct sales from producers to consumers.

The fourth identified tension is organizational. The CATL began as a citizens' initiative but struggled to achieve significant results with voluntary efforts, leading to professionalization. This centralization reduced some actors' involvement, yet 64% of questionnaire participants still view the CATL structure as horizontal or rather horizontal. Despite centralizing, the CATL continued expanding its network, involving more actors in the food transition. Questionnaire responses indicate that periods of further centralization coincided with network expansion. This openness to new partners shows that the trade-off between the bottom-up aspects and the professionalization did not exclude members or diminish their input. Instead, it used the centralization process to involve more actors and connect them, mutually benefitting most actors. An advisor from the municipality expressed that the contact with a few people centralizes the knowledge, and the CATL can further connect with its network to facilitate expertise sharing and collaboration. This form of centralization thus maintains the network open and facilitates the contact between actors.

The fifth tension identified was institutional. Initially, public authorities subsidised the CATL solely for job creation, despite the CATL's broader environmental, social, and economic goals. The CATL had to emphasize job creation to align with public institutions' priorities. However, over time, the CATL built trust with public authorities and was increasingly recognized for its expertise about AFS. It led the municipality to recognize the non-economic aspects of the project, resulting in collaboration on joint projects. The integration of alternative agriculture and short supply chains in the territorial development plan of 'Liège Métropole'[1] shows that by balancing compliance with public institutions and still developing other aspects of AFNs, the CATL achieved smooth institutional integration. The CATL's expertise and awareness-raising activities convinced public institutions of the compatibility of AFN values with public goals. To broaden its impact, the CATL integrated into regional politics by joining the Walloon sustainable food council, scaling its influence beyond the municipality. This gradual acceptance of institutional constraints, coupled with continuous development of AFN aspects, enabled the CATL to gain legitimacy, which integrated AFN values in public institutions.

Concerning market institutions — understood as norms, rules, and cognitive patterns shaping collective actions (Manganelli et al., 2020) — the CATL positions itself against supermarkets and current market institutions. The inclusion of AFN products in supermarkets is seen as greenwashing and a barrier to AFN development. Indeed, integrating AFN products in corporate strategy often corrupts them (Friedmann, 2007, Goodman et al., 2012). In agro-industrial distribution channels, AFN products are reduced to market value, neglecting the extra-market aspects that characterize them. Supermarkets often impose unsustainable

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[1] Group of 24 municipalities around Liège working together on territorial development

conditions on producers, including fixed prices and strict contracts. This integration does not aim at shifting consumers' food habits, but aims to attract AFN conscious consumers, deviating them from other AFN retail points. Therefore, the institutions shaping food consumption remain influenced by supermarkets, which do not align with AFNs' extra market values.

The sixth tension identified was the resource tension. Securing resources like land, funding, material, human capital, or knowledge, forces AFNs to interact with socio-institutional system, creating sectoral tensions. As a non-market actor, the CATL activities are hardly financeable. Initially, the CATL secured human capital by mobilizing the community and organizing forums. Financial resources were then obtained by engaging public authorities. Regarding land resources, all the interviewees stressed the importance of the rural-urban relationships. Therefore, intangible resources, such as networking and connections with rural and urban actors, producers, consumers, and visibility, were identified as crucial. The CATL developed these resources by expanding its network and connecting with public actors. It also developed financeable activities from its acquired knowledge and expertise. This network expansion allowed resource sharing and synergy creation among network actors.

Discussion

This article has explored how coping with governance tensions shaped the development of the CATL as an AFN. It found that the interaction between several actors from different sectors led to dynamic evolution, with the CATL constantly adapting to governance challenges to upscale. Today, the CATL is recognized as an institutional partner and collaborates with public institutions on AFN development, showing its importance and legitimacy. The adoption of policies and the creation of public projects supporting AFNs in collaboration with the CATL demonstrates its success in coping with tensions to scale institutional impact. From structuring a bottom-up citizens' initiative to mobilizing resources, the CATL adopted an inclusive approach and addressed problems with adaptive solutions. The openness to new actors and the capacity tackle challenges enabled the CATL to grow and gain legitimacy as a food transition expert, now supporting the public sector in policy development.

The analysis of the CATL and its governance challenges showed that flexibility and networking, coupled with an open approach, enabled the CATL to cope with the governance tensions and to scale the AFNs in Liège. Over time, the CATL networking feature was strengthened. The research demonstrates that networking, the ecosystem in which AFNs develop, and the support they have from similar initiatives are important factors of development. Starting at the municipality level and then networking with actors from the surrounding regions, the CATL inspired similar initiatives in other cities, linked actors, and amplified its partners' voices. The networking aspect demonstrated a 'critical mass', encouraging public authorities to engage in the food transition. Additionally, the flexibility of the CATL demonstrated high adaptability to the needs of different actors. By establishing core missions since the beginning, the CATL ensured consistency while being flexible to imposed constraints. This flexibility enabled collaboration with more actors, increased legitimacy across sectors, and enabled constant adaptation while preserving its core missions.

Some institutional tensions remain with the market sector. Now that the relation with the public sector is established and that collaboration with different levels of public authorities exist, developing the relation with the market sector remains important. The CATL convinced the public sector of AFS' public benefits. To have a broader impact, the market sector would need similar persuasion to initiate this transition as well. Expanding the CATL network in the community and public sector could demonstrate to the market sector that AFN values would benefit them. Currently, the market sector focuses solely on financial profit, often ignoring the social or environmental benefits, and disregarding AFNs' values. It is impossible for the AFNs to change their '*raison d'être*', and for them to thrive, the market sector must adopt AFNs social and environmental values and respect governance structures that empower producers and consumers. This shift is essential to further develop alternative food systems.

Conclusion

The socio-political embeddedness of AFNs makes generalizations from this case study hardly transposable to other AFNs. However, this research outlines that interacting with different social orders and managing governance tensions foster AFN development and their scaling potential. While considering their specific socio-political context, other AFNs could reflect on their strategic management of relations with different sectors and emerging tensions to foster their scaling.

Combining the welfare-mix model [fig.1] with organizational, institutional, and resource tensions already observed as tensions emerging from hybrid governance, it offers a comprehensive framework to study governance tensions in the development of AFNs. It builds on the hybrid governance approach by Manganelli et al. (2020), enhancing the understanding of when and how sectoral boundaries generate tensions. By anticipating the moments tensions can arise, and the type of tensions, it provides concrete guidance for AFNs to better cope with governance tensions and foster their scaling process. This framework can also benefit broader sustainability transitions research, where cases can be analysed using governance tensions coping mechanisms within the hybrid governance framework. While this case study suggests networking and flexibility as primary methods for dealing with tensions, the list is not exhaustive. Other AFNs might propose different successful strategies. By learning from various approaches, AFNs can adapt and refine their strategies to better navigate governance tensions and scale their impact.

Bibliography

ANDRÉE, P., CLARK, J. K., LEVKOE, C. Z. & LOWITT, K. 2019. *Civil society and social movements in food system governance*, Taylor & Francis.

ANGOTTI, T. 2015. Urban agriculture: long-term strategy or impossible dream?: Lessons from Prospect Farm in Brooklyn, New York. *Public Health,* 129**,** 336-341.

AVELINO, F. & WITTMAYER, J. M. 2016. Shifting power relations in sustainability transitions: a multi-actor perspective. *Journal of Environmental Policy & Planning,* 18**,** 628-649.

AVELINO, F., WITTMAYER, J. M., PEL, B., WEAVER, P., DUMITRU, A., HAXELTINE, A., KEMP, R., JØRGENSEN, M. S., BAULER, T., RUIJSINK, S. & O'RIORDAN, T. 2019. Transformative social innovation and (dis)empowerment. *Technological Forecasting and Social Change,* 145**,** 195-206.

BIRCH, K. & WHITTAM, G. 2008. The third sector and the regional development of social capital. *Regional Studies,* 42**,** 437-450.

CHILVERS, J. & KEARNES, M. 2015. Participation in the making: rethinking public engagement in co-productionist terms. *Remaking participation.* Routledge.

COLONA, F. & JAFFE, R. 2016. Hybrid governance arrangements. *The European Journal of Development Research,* 28**,** 175-183.

DECUIR-GUNBY, J. T., MARSHALL, P. L. & MCCULLOCH, A. W. 2011. Developing and Using a Codebook for the Analysis of Interview. *Field Methods,* 23**,** 136-155.

EVERS, A. 1995. Part of the welfare mix: The third sector as an intermediate area. *Voluntas: International Journal of Voluntary and Nonprofit Organizations,* 6**,** 159-182.

EVERS, A. & LAVILLE, J.-L. 2004. *The third sector in Europe*, Edward Elgar Publishing.

FEYEREISEN, M., STASSART, P. M. & JONET, C. 2017. From local initiatives to territorial transition project: case study of a grassroots food belt project in Liège (Belgium).

FRIEDMANN, H. 2007. Scaling up: Bringing public institutions and food service corporations into the project for a local, sustainable food system in Ontario. *Agriculture and Human Values,* 24**,** 389-398.

FYFE, N. R. 2005. Making space for "neo-communitarianism"? The third sector, state and civil society in the UK. *Antipode,* 37**,** 536-557.

GONZÁLEZ, S. & HEALEY, P. 2005. A sociological institutionalist approach to the study of innovation in governance capacity. *Urban studies,* 42**,** 2055-2069.

GOODMAN, D., DUPUIS, E. M. & GOODMAN, M. K. 2012. Alternative food networks: Knowledge, practice, and politics.

HAJER, M., NILSSON, M., RAWORTH, K., BAKKER, P., BERKHOUT, F., DE BOER, Y., ROCKSTRÖM, J., LUDWIG, K. & KOK, M. 2015. Beyond Cockpit-ism: Four Insights to Enhance

the Transformative Potential of the Sustainable Development Goals. *Sustainability,* 7**,** 1651-1660.

HAXELTINE, A., KEMP, R., DUMITRU, A., AVELINO, F., PEL, B., WITTMAYER, J., CHILVERS, J., DORLAND, J., HARGREAVES, T. & BLANCO, I. L. 2015. A first prototype of TSI theory.

HAXELTINE, A., PEL, B., WITTMAYER, J., DUMITRU, A., KEMP, R. & AVELINO, F. 2017. Building a middle-range theory of Transformative Social Innovation; theoretical pitfalls and methodological responses. *European Public & Social Innovation Review,* 2**,** 59-77.

JESSOP, B. 2011. Metagovernance. *In:* BEVIR, M. (ed.) *The SAGE Handbook of Governance.* London: SAGE Publications Ltd.

MANGANELLI, A., VAN DEN BROECK, P. & MOULAERT, F. 2020. Socio-political dynamics of alternative food networks: a hybrid governance approach. *Territory, Politics, Governance,* 8**,** 299-318.

MOUNT, P. 2012. Growing local food: scale and local food systems governance. *Agriculture and Human Values,* 29**,** 107-121.

PEL, B., HAXELTINE, A., AVELINO, F., DUMITRU, A., KEMP, R., BAULER, T., KUNZE, I., DORLAND, J., WITTMAYER, J. & JØRGENSEN, M. S. 2020. Towards a theory of transformative social innovation: A relational framework and 12 propositions. *Research Policy,* 49**,** 104080.

PESTOFF, V. A. 1992. Third sector and co-operative services—An alternative to privatization. *Journal of consumer policy,* 15**,** 21-45.

SAGE, C. 2014. The transition movement and food sovereignty: From local resilience to global engagement in food system transformation. *Journal of Consumer Culture,* 14**,** 254-275.

STRASSER, T., DE KRAKER, J. & KEMP, R. 2019. Developing the transformative capacity of social innovation through learning: A conceptual framework and research agenda for the roles of network leadership. *Sustainability,* 11**,** 1304.

TAVORY, I. & TIMMERMANS, S. 2014. *Abductive analysis: Theorizing qualitative research*, University of Chicago Press.

VAN DOREN, D., GIEZEN, M., DRIESSEN, P. P. J. & RUNHAAR, H. A. C. 2016. Scaling-up energy conservation initiatives: Barriers and local strategies. *Sustainable Cities and Society,* 26**,** 227-239.

WISKERKE, J. S. 2009. On places lost and places regained: Reflections on the alternative food geography and sustainable regional development. *International planning studies,* 14**,** 369-387.

YIN, R. K. 2009. *Case study research: Design and methods*, sage.

The role of food movements in catalyzing Urban Food Policies. The Punto al Cibo network in Torino

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The role of food movements in catalyzing Urban Food Policies. The Punto al Cibo network in Torino

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This paper presents an exploration into the socio-political evolving dynamics of urban food policy-making, with a specific focus on the role of emerging actors. Central to this exploration is the recognition of urban food movements as key catalysts in reshaping local food systems. Indeed, far from being mere observers, these movements actively engage in and influence civil society's participation in policy-making, thereby enhancing the democratic nature of decision-making and promoting inclusivity in policy development. This study documents the current landscape of urban food movements, investigating the factors contributing to their emergence and effectiveness. It critically examines the sustainability of these movements, their capacity to drive long-term policy changes, and the challenges they encounter in sustaining momentum and relevance amidst the rapidly changing urban environment. At the heart of this study is an empirical examination of the Turin context, where there is a notable surge in interest and involvement in local food politicy process
 of the "Punto al Cibo" movement, an entity that has become a significant actor in the governance of Turin's food system. Punto al Cibo, characterized as a network of networks, represents a curious interplay of initiatives, organizations, and individuals dedicated to transforming the food system in Turin. This paper delves deeply into the structural and operational nuances of Punto al Cibo, analyzing its influence on shaping local food policy, its impact on the broader food system, and its potential as a replicable model for other urban areas facing similar challenges.
The methodology of this research includes comprehensive desk research, analyzing Punto al Cibo's documents, and active participation in its meetings and network assemblies. It employs a flexible thematic analysis approach, which allows for the identification of relevant themes emerging both from the research objectives and the in-depth analysis of textual materials.
By offering a detailed case study of "Punto al Cibo" and its pivotal role in the context of Turin's urban food policy, this paper makes a substantial contribution to the broader understanding of urban food policy-making. It provides valuable insights for policymakers, academics, and activists involved in urban food systems, potentially informing and inspiring similar initiatives globally.

Keywords: food systems, hybrid governance, civil society, food movements

The theoretical framework

The present research fits into the comprehensive body of knowledge concerning the development of policies aimed at governing urban food systems (Pothukuchi, Kaufman, 1999; Morgan, 2010; Wiskerke, 2009; Bini *et al.*, 2017). Called by the name of urban food policies, these are typically described using two main approaches: "top-down" and "bottom-up" (Halliday & Mendes, 2019). The "top-down" approach involves greater participation from local institutions, emphasizing the role of governmental bodies in policy formulation and implementation. Conversely, the "bottom-up" approach is rooted in grassroots initiatives, where community groups and civil society organizations drive policy development from the ground up. However, public policy production in practice is often a hybrid process, characterized by constant interaction and dialogue between these two approaches. This hybrid process ensures that policies can simultaneously address the needs and priorities of both institutions and social groups. Traditionally, the power to make policy was concentrated in the

hands of the state. Over the past thirty years, however, there has been a significant shift towards greater cooperation between institutions and civil society groups. The International Encyclopedia of Civil Society describes these groups as diverse associations engaged in collective action based on shared interests, tasks, and values (Anheier, Toepler, & List, 2010). This evolving cooperation has given rise to multi-level governance structures, often referred to as "bottom-linked governance". This term highlights the optimization of governance processes through synergistic interactions and collaborations between grassroots actors and formal institutions (Moulaert et al., 2019).

The involvement of civil society is crucial as it provides empirical insights and a grounded understanding of the challenges facing urban food systems. Effective transformation of food systems requires a democratic and inclusive decision-making process. Civil society organizations, including non-governmental entities, serve as key knowledge bearers, offering valuable contributions to the policy-making process (Moragues-Faus & Morgan, 2015). Their close connection to local realities and their diverse representation of interests and perspectives allow them to identify and address the specific needs and gaps within urban food systems.

For these reasons, the food policy-making process must actively involve civil society, ensuring that the voices of all stakeholders, including marginalized food actors, are heard and considered. Supportive state institutions play a crucial role in facilitating this involvement, creating an enabling framework for meaningful participation. Additionally, empowering marginalized food actors is essential for fostering a more equitable and sustainable food system (Manganelli, 2022).

The role of food movements

In this mentioned context of evolving governance and policy-making processes, food movements have emerged as pivotal actors in advocating for more sustainable and equitable food systems. Originating in the late 1950s and gaining significant traction in the 1960s, particularly among environmental activists, these movements have tackled a wide array of issues, including agrarian reform, food sovereignty, sustainable agriculture, fair trade, and community food security (Koç et al., 2008; Winne, 2008; Manganelli, 2022; Desmarais, 2007; Altieri, 1995; Holt-Giménez, 2006; Gliessman, 2007; Bacon et al., 2008; Halweil, 2004).

Food movements typically challenge the capitalist tendencies of the international food regime by advocating for systems that are not only sustainable and equitable but also democratic. They call for structural reforms that ensure inclusivity and fairness in food production and distribution. A key aspect of their strategy is the formulation of clear political proposals and the mobilization of broad social participation to effectively influence policy decisions. Indeed, engaging citizens in deliberative democracy is critical, as it provides a necessary space for discussing public needs and perceptions, thereby fostering a more participatory and responsive approach to governance (Holt Giménez & Shattuck, 2011; Bagliani & Dansero, 2011). Food movements also stimulate the development of specific competencies across political, technical, organizational, and entrepreneurial fields, enriching the expertise available for food-related struggles (Holt Giménez & Shattuck, 2011). Their intersectoral and intersectional nature allows them to adopt a global and systemic perspective (Andrée et al., 2019).

In examining the role of food movements, it is essential to understand their impact on local and global scales, the strategies they employ, and the diverse challenges they face. Given that these movements involve a wide variety of actors, forming "containers of collective identities" that, despite differences, collaborate towards common goals (Bauermeister, 2016), they practically stimulate the creation of activities through shared aspirations and values, facilitating knowledge exchange and fostering informal political consolidation (Manganelli, 2022; Kropp, 2018).

The section now delves into these aspects, highlighting how food movements contribute to shaping policies and practices that promote sustainability, equity, and democracy within food systems.

According to Latham (2016), food movements are characterized by their self-organization and horizontality, which means they operate on principles of equality and collective decision-

making. These movements emphasize a grassroots orientation aimed at building hybrid governance from below, as noted by Manganelli (2022). This grassroots approach involves local communities taking initiative to create systems of governance that combine various methods and structures. Furthermore, food movements have an international presence but retain distinct national characteristics, allowing them to address local needs while being part of a global network. They embody multiple values and unique interests, which helps them form alliances around shared goals, uniting diverse groups under common objectives. Despite their limited financial resources, these movements are known for their spontaneous, vigorous, and independent nature, demonstrating resilience and adaptability in the face of challenges.

These movements often form a "network of networks", generating synergies through collaboration and resource exchange, enhancing their impact and fostering broader engagement across scales, places, and sectors (Andrée et al., 2019; Levkoe, 2014).

Briefly, food movements, like social movements, consist of diverse organizations and initiatives engaged in collective action (Della Porta & Diani, 2006). They address local and global food system issues, aiming to make these systems more sustainable, healthy, and equitable (Holt Giménez, 2011; Morgan, 2015; Manganelli, 2022). Driven by moral, ethical, and cultural principles, they often unite civil society in pursuit of common goals, employing location-specific strategies and fostering cooperation for the common good. Their actions not only address food-related issues but also create new forms of knowledge, empower individuals, and establish collaborative networks (Sage et al., 2021).

The research question

Building on this framework, this research investigates the role and impact of food movements, focusing on the features that characterise them. Key questions guiding this research include what specific factors and elements distinguish a food movement from other types of social movements and advocacy groups, and how these unique attributes contribute to their transformative potential for shaping and reforming food policies. By examining the case study of Turin and analyzing its strategies, successes, and challenges, this study seeks to understand its effectiveness in promoting sustainable and equitable food systems, as well as their ability to drive policy changes that reflect the values and needs of diverse communities.

Methodology

The empirical research focused on the Turin network known as "Punto al Cibo." This network aims to enrich food-related discussions in Turin. The research involved desk analysis of documents produced by Punto al Cibo and participation in their meetings. Key themes were identified from meeting reports, workshop posters, and minutes, using a flexible thematic analysis approach (Deterding & Waters, 2021).

The table below summarizes the themes from both the initial and subsequent phases of research:

Initial Phase Themes	Documents	Subsequent Phase Themes	Documents
Network/Synergy	Letter of Intent	Institutionalization	Letter of Intent, Workshop Posters
Commitment	Letter of Intent, Meeting Minutes	Local Experience Enhancement	Assembly Reports, Meeting Minutes, Workshop Posters
Dialogue Space	Assembly Reports, Meeting Minutes	Intersectionality	Meeting Minutes
Active Participation	Letter of Intent, Workshop Posters	Topic Knowledge	Assembly Reports

Table 1: Phases of Document Thematization. Source: Authors' elaboration based on documents produced by Punto al Cibo.

Using this methodology, we reconstructed Punto al Cibo's process to understand the events behind its formation, to acknowledge if it can be considered a food movement, and whether it achieved its initial goals.

The process of Punto al Cibo

In recent years, in Turin, interest in food issues, local food systems, and the desire to impact local processes have driven the organization of a renewed dialogue between associations, grassroots networks, and the University of Turin. The University played a crucial role in facilitating these processes by leveraging its knowledge and presence in local food system events (Pettenati et al., 2018).

Starting in summer 2021, weekly meetings were held to create a structured dialogue network. This group identified common themes and goals, building a collective identity. The network's success in aggregation and involvement was due to the unique territorial knowledge and similar, yet distinct, action scales of the participating entities.

Punto al Cibo reflects typical food movement characteristics: horizontal structure without centralized leadership, active civil society participation, inclusivity, and thematic breadth. These organizations work on various fronts of the food system, promoting synergy while maintaining individual identities.

Some discussions

Groups involved with Punto al Cibo expressed strong intentions to improve food waste policies, educate consumers, and highlight the importance of local products and small producers. The key themes emerging from their discussions include:

1. Valuing Local Realities: Emphasizing the unique characteristics and strengths of local food systems.

2. Supporting Vulnerable Groups: Ensuring that food policies address the needs of marginalized and vulnerable populations.

3. Creating Dialogue: Facilitating ongoing communication between different entities and institutions to drive environmental, social, and economic regeneration.

The groups highlighted the importance of raising consumer awareness about sustainable food practices, promoting self-production in urban gardens, and fostering active participation from the general population. They recognized the critical need for spaces where public administration can engage directly with citizens, facilitated by organizations working on the ground.

A significant identified challenge was the fragmentation of initiatives. This underscores the necessity for a coherent local food policy that integrates actions across various levels and actors within the local agri-food chain. Such a policy could improve communication, support solidary purchasing groups, and facilitate direct interactions between producers and consumers.

A well-defined local food policy could also address the perceived inattention of the Public Administration by establishing an institutional dialogue space. This policy would serve as a platform for developing narratives, communicating messages, and launching local campaigns, while promoting an interdepartmental approach to addressing food system issues.

In summary, Punto al Cibo's member organizations believe that Turin needs a dedicated food policy to enhance the sustainability and inclusivity of its food system. They intend to coordinate and collaborate closely to contribute to the definition and implementation of this policy. This coordinated effort is seen as crucial for achieving significant and sustainable improvements in the local food system.

Conclusion

In a landscape of growing interest in food governance, this research explored the role of food movements in shaping local food policies. It identified key characteristics of food movements:

grassroots nature driven by civil society, horizontal organization, shared values, and a collective identity focused on food sovereignty and security. The study examined Turin's progress towards a definitive food policy, assessing the contributions of emerging actors and using empirical analysis to determine the formation of a food movement. Researchers' active participation in Punto al Cibo's activities supported the assertion that it qualifies as a food movement. This movement, with its unique dynamics and objectives, is pivotal in crafting a food policy that addresses the specific needs of the Turin community. The persistent involvement of civil society has created a common platform for expressing concerns and organizing initiatives, demonstrating the potential of such networks to drive significant changes in food systems and promote active participation in decision-making. Still, there is evidence that the local process of food policy making is not sufficiently involving the movement into its process.

Bibliography

Altieri, M. A. (1995). Agroecology: the science of sustainable agriculture. Boulder. Westview Press. Part Three Dev. Clim. Rights, 238, 12052-12057.

Anheier, H. K., S. Toepler, and R. List. (2010). International Encyclopedia of Civil Society. New York, NY: Springer.

Bacon, C., et al. (2008). Confronting the coffee crisis: fair trade, sustainable livelihoods and ecosystems in Mexico and Central America. Cambridge: Massachusetts Institute of Technology.

Bagliani, M. M., & Dansero, E. (2011). Politiche per l'ambiente. Dalla natura al territorio (pp. 1-400). UTET università

Bauermeister, M. R. (2016). Social capital and collective identity in the local food movement. International Journal of Agricultural Sustainability, 14(2), 123-141.

Della Porta, D., & Diani, M. (2006). Social Movements: An Introduction. 2nd ed. Oxford: Blackwell Publishing.

Desmarais, A. A. (2007). La Via Campesina: Globalization and the Power of Peasants, Halifax. Fernwood Publishing. Journal of Rural Studies, 21(3), 359-371.

Deterding, N. M., & Waters, M. C. (2021). Flexible Coding of In-depth Interviews: A Twenty-first-century Approach. Sociological Methods & Research, 50(2), 708-739.

Gliessman, S.R. (2007). Agroecology: the ecology of sustainable food systems. New York: Taylor and Francis Group.

Halliday, J., & Mendes, W. (2019). Cities' Strategies for Sustainable Food and the Levers They Mobilize. In Designing Urban Food Policies (pp. 53, 74). Springer International Publishing.

Halweil, B. (2004). Eat here: reclaiming homegrown pleasures in a global supermarket. New York: Norton.

Holt Giménez, E. & Shattuck, A. (2011). Food crises, food regimes and food movements: rumblings of reform or tides of transformation?. The Journal of peasant studies, 38(1), 109-144.

Holt Giménez, E. (2006). Campesino a Campesino: voices from Latin America's farmer to farmer movement for sustainable agriculture. Oakland: Food First Books.

Holt Giménez, E. (2011). Food security, food justice or food sovereignty? Crises, food movements and regime change. In: Alkon AH, Agyeman J (eds) Cultivating food justice. MIT Press, Cambridge, MA.

Kropp, C. (2018). Urban food movements and their transformative capacities. The International Journal of Sociology of Agriculture and Food, 24(3).

Latham, J. (2016). Why the food movement is unstoppable. Independent Science News, 20.

Levkoe, C. Z. (2014) The food movement in Canada: a social movement network perspective. Journal of Peasant Studies, 41(3), 385–403.

Manganelli, A. (2022). The Hybrid Governance of Urban Food Movements: Learning from Toronto and Brussels. Springer Nature.

Marino, D., & Mazzocchi, G. (2022). L'evoluzione della Food Policy a Roma: quali scenari?. RE| CIBO, 1(1), 55.

Moragues-Faus, A., & Morgan, K. (2015). Reframing the foodscape: the emergent world of urban food policy. Environment and Planning A: Economy and Space, 47(7), 1558-1573.

Morgan, K. (2015). Nourishing the city: The rise of the urban food question in the Global North. Urban Studies, 52(8), 1379-1394.

Moulaert F, MacCallum D, Van den Broeck P, García M (2019) Bottom-linked governance and socially innovative political transformation. In: Schröder A, Kaletka C, Howaldt J, Zirngiebl M (eds) Atlas of social innovation—a world of new practices. Oekom verlag, München, pp 62–66

Pettenati, G., Dansero, E., Toldo, A. (2018). The Turin food System toward a Metropolitan Food Policy: An Actorial Perspective. In Re-imagining sustainable food planning, building resourcefulness: food movements, insurgent planning and heterodox economics. Proceedings of the 8th Annual Conference AESOP Sustainable Food Planning group. Coventry: Coventry University.

Sage, C., Kropp, C., & Antoni-Komar, I. (2021). Grassroots initiatives in food system transformation: The role of food movements in the second 'Great Transformation'. In Food System Transformations. Taylor & Francis.

Swain, J., (2018). A hybrid approach to thematic analysis in qualitative research: Using a practical example. In Sage Research Methods Cases Part 2. SAGE Publications, Ltd.

Winne, M. (2008) Closing the food gap: resetting the table in the land of plenty. Beacon Press, Boston.

PAPER SESSION 3.A
PUBLIC FARMLAND AND
PUBLIC POLICY

Public urban agriculture equipment for sustainable food systems: the necessary mobilization of multiple public policies

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Public urban agriculture equipment for sustainable food systems: the necessary mobilization of multiple public policies.

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ABSTRACT

The question of healthy, sustainable and equitable food systems has become a major issue in current food and environmental policies, particularly in cities. For public authorities, urban agriculture designed and maintained according to the most exemplary sustainable agricultural practices appear to be a relevant response. The triple layered business model (Joyce and Paquin, 2016), usually used to study an organization's sustainability strategy, here reveals an essential governance and policy convergence for two urban farms that everything seems to oppose (history, location, types of farming practices, management method): the "*Potager du Roi de Versailles*" and the "*Cite Maraichère de Romainville*". Our analysis shows the mobilization of multiple public policy and general interest missions by these urban farms and leads us to propose their characterization by an innovative concept "Public Urban Agriculture Equipment (PUAE)". This concept can enable and enhance their utility and replicability. First, both examples drive urban economic development and place agriculture in urban landscapes that are no longer immediately associated with them. Second, at the centre of the multiple missions (food production, economic, urban planning, health prevention, environmental protection, leisure, social link) of these PUAE is teaching and lifelong training. So, the renewal of the farmers now involves urban residents. Finally, the public status and economic business model of these PUAE allow for the technical and social experimentations necessary to develop adapted territorial responses and sustainable food systems.

Keywords:

Uurban agriculture, public equipment, triple layered business model, agriculture education

Introduction

Urban agriculture (UA) has recently been in rapid development in Western countries. In France, numerous UA initiatives were born under the impetus of entrepreneurial or associative projects and in the capital Paris with the incentive call of projects, Parisculteurs. Public policies have amplified this movement by making calls for sustainable UA projects within numerous townships and within priority districts of different cities (ex: call for "100 fertile districts" of the ANRU (Agence nationale de rénovation urbaine), or UA companies call supported by France 2030 1st factory, launched by the French State). The economic social crisis and, since 2023, wars induce the involvement of municipalities with agriculture development. Although, agriculture is not a normal remit for French municipalities (Boussaguet, 2020) the question of food sovereignty has imposed itself on many cities. Their agricultural involvement have appeared through the indirect form of *Plan Local d'Urbanisme* (Town Planning Regulations) modifications, including zoning, economic, social and environmental constraints.

The diversity and specificities of each UA project make their sustainability difficult to evaluate. With two UA farm case studies (*Potager du Roi* of Versailles, *Cité maraîchère* of Romainville) we cross and integrate two different approaches to understanding how these farms organize their sustainability strategies based on food production. Our methodology consists in the conjoined use of plans characterising space functions and the Triple layered business model (Joyce and Paquin, 2016) identifying the economic, environmental and social impacts of their activities. The application of this approach to two extraordinarily different urban farms around Paris reveals an essential policy and governance convergence. We will first present the plans

of the two farms and how their layout answers their missions for the communities. We will then show how the Triple layered business model leads us to propose the innovative concept of Public Urban Agriculture Equipment (PUAE), particularly through their mobilization of multiple public policy and general interest missions.

Two extraordinarily different urban farms with a same dominant mission

To the Southwest of Paris, the *Potager du Roi* (PDR) in Versailles, created at the behest of Louis XIVth since 1683, produces fruit and vegetables on a 9.4 hectares site with an incessant evolution of techniques. The PDR has always been operated by a public institution, and is now a listed historical monument and part of the Versailles UNESCO World Heritage Site. Capital of a "department", the 84,800 inhabitants of Versailles have a poverty rate well below the national average (7% vs. 13.9%) (Insee, 2019), and a per capita surface area of green spaces well above the average (70 m² vs. 51 m^2) (*Observatoire des villes vertes*, 2020). Since 1790s, the PDR has been home to leading horticulture and landscape schools, including the current *École Nationale Supérieure de Paysage* (ENSP). This school operates under the principal supervision of the French ministry of Agriculture and Food sovereignty, as well as three other ministries. The sustainable farming practices used at the PDR are based on the conservation of traditional know-how as well as contemporary reduced-till organic farming. The PDR sells its food production, operates a bookstore and organizes events on site.

On the Northern outskirts of Paris, the *Cité Maraîchère* (CM), opened in 2021, is managed by the Romainville municipality, as a multifunctional urban farm in line with the environmental, social and economic policies pursued by the town council. Romainville has a population of 30,000, with a high poverty rate (25%), well above the national average (13.9%), and an unemployment rate of 17%, which is 8.4% higher than the national average. The 23 m² of green space per inhabitant in Romainville is the among the lowest in France. The CM, a vertical greenhouse composed of 2 towers (3 and 6 storeys high), with over 1,000 m^2 of Utilized Agriculture Area, is dedicated to growing vegetables and small fruit, and houses catering facilities as well as public awareness and training workshops. Designed with a circular economy perspective, the CM aims to be an UA laboratory using low-tech planter box solid substrate agricultural technologies combined with an advanced rainwater recovery system, natural ventilation and heating, and on site composting of organic waste.

Food production and services: the multiple functions of each farm

Through interviews with the personnel and stakeholders (NGOs, local officials, companies) of each site the functions of the different areas were characterized (Figure 1). What is most striking is how the functions and the areas they circumscribe overlap. The presence of an educational, outreach, event or paying customer public is observed. The "technical area" for the agricultural equipment is, in principle, the only space that does not allow for the presence of a "public". The dominant categories for PDR are "food production and education", "education" and "events". The dominant categories for CM are "food production and education", "technical area" and the two food service categories, "restaurant" and "kitchen". Of the 14 categories, there are 3 that are found only at PDR: "food production and events", "shop" and "flowerbeds". The CM does not allow for the production space to be used for events and has neither a non-food shop nor ornamental plant beds. The other 11 categories are found on both sites. The difference in scale of the two sites has been visually compensated for by reducing the two plans to occupy approximately the same space. All the same, it must be mentioned that the CM building occupies a plot of approximately 750 m^2 while the PDR measures over 92 000 m^2 and just the buildings cover over 4000 m^2. The photograph of each site has been chosen so as to make explicit the common urban character as well as the extraordinary difference between the two sites.
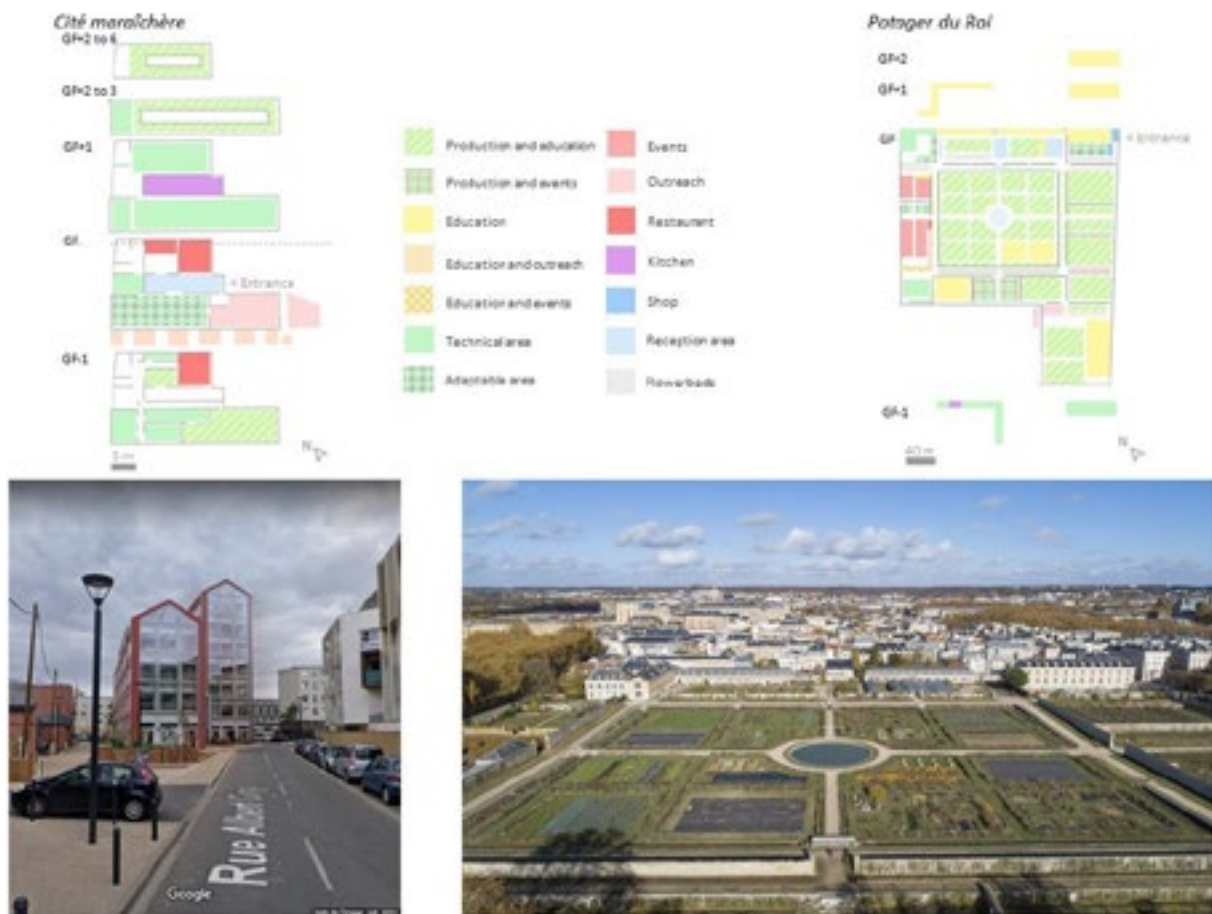
FIGURE 1: Spatial distribution of the economic activities of *Cité Maraîchère* and *Potager du Roi,* and illustrative photographs (credits GoogleEarth and Duboys-Fresney).

How the Triple Layered Business Model leads to Public Policy Analysis

The business model (BM) concept that emerged in the 1970's addressed the ways in which "an organization creates, distributes and captures value" (Pieroni et al, 2019) but does not address an organizations' implementation of sustainability. The Triple Layered Business Model (TLBM) of Joyce and Paquin (2016) remedies this by adding two more layers to the economic canvas, one environmental and one social. The environmental canvas, based on the principle of Life Cycle Assessment (LCA), highlights the strategy and environmental impact of the products and services provided, from their production to their end of life. The social canvas details the interactions between the organization and its stakeholders, and identifies its social impacts. When the TLBM is applied to our two case studies (for the methodology and the presentation of each canvas, see Saint Ges et al, currently under evaluation 2024), one of the results is the explicit mobilization of a multiplicity of public policies that are not explicitly agricultural. Indeed, agriculture policy is not included in the remit of French municipalities (Boussaguet, L., 2020). Within the current context of climate change, cities participate nonetheless directly in the ambition to create healthy, sustainable and equitable food systems.

Elaborating the TLBM canvas's first allows the identification of the strategy of the 2 urban farms (production and sale of produce and services) to achieve the 5 principal activities: food production, food processing and catering, education and outreach, experimentation, events

and space rental. Then, the TLBM identifies the means by which these activities answer a large array of value challenges: from environmental, social and economic through to health. The environmental value is created by agroecological practices: zero pesticide, recycling urban waste, low energy and water consumption, create and regenerate biodiversity, reduced transportation. The value of social justice is reinforced by the following practices: improving living conditions, work conditions diet and social cohesion, promoting nature learning, participatory sciences, physical activity and better transmission of agriculture practices. The economic value is created by the following activities: reducing unemployment, improving living conditions, developing innovations, territorial attractiveness and agriculture practices in an urban context. The health value is created by the following practices: food produced, transformed and distributed locally using agroecological practices, improved living and working conditions, improved diet, greater physical activity. Moreover, PDR and CM farms answer the major environmental, social justice and food sovereignty challenges facing cities and their inhabitants. The two urban farms, PDR and CM, create and distribute value for students, children, unemployed or non-socially integrated populations as well as companies and NGOs. For public authorities, urban farms designed and maintained according to the best sustainable agricultural practices become a relevant lever for meeting these major contemporary issues (Aubry *et al*., 2022). PDR and CM are financed and managed by public institutions which provide services to as many citizens as possible. Funding for *Potager du Roi* and *Cité Maraîchère*, comes from a variety of local, departmental, regional, national and European public policies, ranging from environmental protection and food to economic development and education.

The public policies aim to encourage sustainable responses to these issues (Table1). Our use of the TLBM makes the profound imbrication of the public policies evident and visible. These two fundamental characteristics (public financing and service for the general public) brings us to analyse these two urban farms in terms of Public Urban Agriculture Equipment.

Activities	Issues	Concerned public	Public policies
Production	Fresh local fruits & vegetables Zero pesticides Recycling urban waste Low energy and water consumption Biodiversity Reduce unemployment Create agriculture skills Improve living conditions	Local population Local companies Restaurants NGOs Tourists	Urban planning Environment Health Economy (employment)
Food processing and catering	Reduce unemployment Social cohesion Fresh local food Reduce transportation	Local population Local companies NGOs Tourists	Environment Economy Health Social (canteens)
Education Outreach	Produce seasonality Improve diet Nature learning Physical activity Social justice	Children & adults NGOs	Social Education Health Culture
Experimentation	Develop agroecological practices Participatory sciences Share better practices Innovations Territorial attractiveness	Farmers Amateur and professional gardeners Teachers Researchers	Research Economy
Events & space rental	Transmission of agriculture practices Environment Improve work conditions and team building Territorial attractiveness	Companies NGOs	Economy

Table 1: Public policies and urban agriculture as seen through the activities, issues, and concerned population of *Potager du Roi* et *Cité Maraichère*

Highlighting necessary city ecosystem services through Public Urban Agriculture Equipment

Urban agriculture is often precarious due in great part to the intense competition for land within cities. Nonetheless, our two case studies reveal the multiple services provided to the local populations and justify both the public financing and the strategic leadership role.

In France, the concept of public equipment (*équipement public*) is not widely discussed in the scientific literature (Lherminier, 2015). Public equipment includes two related concepts: "public" indicating that the equipment must serve social justice through being accessible to all; "public" can also mean that this equipment contributes to the conservation of common goods (Ostrom, 2005). In terms of access, our two case studies can be compared to public equipment such as transportation networks, sewage and water systems, gymnasiums, libraries, schools. They are physical in nature, fall within the remit of public authorities and are intended for the use and benefit of the public (Institut Paris Région, 2018). In the general interest and owned by a public organization, public equipment represent fundamental elements in the history of our societies by reflecting the public policies of a given period (Fiole, 2002). For example, stadiums and sport facilities were built at the end of the 19th century to combat urban insalubrity and fatigue from overwork (Callède, 2007). Youth and cultural centres appeared in the 1950s/1960s, giving everyone access to cultural leisure activities (Besse, 2015). They are subject to strict regulations and laws. In terms of contributing to the conservation of common resources, Public Urban Agriculture Equipment concerns water and air, biodiversity and plant varieties, food and heritage practices. These resources and practices are fragile and could become non-renewable (Hardin, 2018). They should, or must, remain available and accessible for future generations. The rational pursuit of self-interest results, in more and more cases, in the exhausting or the destruction of the common goods. The creation of Intangible Cultural Heritage Lists and the Register of good safeguarding practices (UNESCO), as well as their equivalent national and local quality labels, highlights a change in attitude towards a simplistic rational economic practice.

The conservation or the creation of Public Urban Agriculture Equipment can be criticized in terms of cost and gentrification of certain neighbourhoods. Nonetheless, the multiple economic, environmental and war related crises since the end of the twentieth century have revealed the strategic importance of food access for urban centres. Public Urban Agriculture Equipment can provide part of the answers for conserving the common vital resources, including food. In addition, from the point of view of the current trends concerning food abundance in western societies, healthy food has become a necessity. The percentage of the population considered overweight continues to increase and obesity could become the number one disease in the world (Mathieu-Bohl, 2024).

Bibliography

Aubry, C., Giacchè, G., Maxime, F., Soulard, C.-T. (2022) Urban agriculture in France. Comprendre les dynamiques, accompagner les acteurs, Versailles: Editions Quae.

Besse, L. (2015) 'L'action des maisons des Jeunes et de la Culture'. Informations sociales. 4, 26-35.

Boussaguet, L. (2020) *Les politiques publiques*, Que sais-je ? Paris: PUF.

Callède, J.-P. (2007) 'Sports facilities networks, cultural innovation and urban functionality'. *Histoire, économie & société*. 2, 75-85.

Fiole, B. (2002) *Les équipements publics et la ville : problématique du dialogue entre le projet de l'équipement et le projet urbain*. [Research report] Lyon: CERTU.

Hardin, G. (2018) *La tragédie des communs*, Paris: PUF.

Joyce, A., Paquin, R.L. (2016) 'The triple layered business model canvas: A tool to design more sustainable business models'. *Journal of Cleaner Production*, 135, 1474–1486.

Institut national de la statistique et des études économiques (INSEE) (2020) 'Unité urbaine / Agglomération / Agglomération multicommunale / Agglomération urbaine. https://www.insee.fr/fr/metadonnees/definition/c1501. Accessed April 28, 2023.

Institut Paris Région, (2018). 'Financing public facilities. What tools are needed to support the constructioneffort?', https://www.institutparisregion.fr/fileadmin/NewEtudes/Etude_1467/Etude_Financement_EqP _VFin2.pdf

Lherminier, C. (2015) 'Équipements publics et participations d'urbanisme', *Les cahiers juridiques de La Gazette* N°185.

Mathieu-Bolh N. (2024) *L'économie de l'obésité*, Paris: Editions la découverte.

Observatoire des villes vertes, 2020. 'Les villes les plus vertes de France, Palmarès 2020', https://www.observatoirevillesvertes.fr/le-palmares-des-villes-vertes-en-2020/. Accessed December 2023.

Ostrom E. (2005) *Understanding institutional diversity*, Princeton: Princeton University Press.

Pieroni, M.P., McAloone, T., Pigosso, D. (2019) 'Business Model Innovation for Circular Economy:Integrating Literature and Practice into a Conceptual Process Model', *Proceedings of the 22nd International Conference on Engineering Design (ICED19)*, p 2517-2526, Delft.

Roles of Local Governments in the Governance of Agricultural Land in France

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Roles of Local Governments in the Governance of Agricultural Land in France

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Abstract: This research sheds light on the various roles played by French local governments in the management of agricultural land. It draws upon a database of 84 initiatives documented on a web platform established since 2020 by the French research institute INRAE and the grassroots movement for access to land Terre de Liens. These initiatives involve local governments and aim to protect farmland and support farming, in particular through generational renewal of farmers. Their description is based on feedback from local actors and research studies. This database reveals the diversity of agricultural land actions taken by local governments, presenting a range of solutions and operational approaches related to land-use planning, land market regulation, mobilization of public land, and facilitating local land relations. It allows us to identify obstacles and drivers to local governments' action on land and to draw generic lessons to support local governments in formulating tailored land strategies, engaging with relevant stakeholders, and better aligning the timelines of public policies with those of farmers. Notable differences are observed between initiatives in rural vs. peri-urban areas, and in plain vs. mountainous regions.

Keywords: farmland, strategies, innovations, up-scaling, public policies, generational renewal

Introduction

In France, 88 hectares of farmland are converted to urban uses every day and half of the farmers will retire within the next ten years. There is growing awareness among policymakers regarding the urgent need to take political decisions to preserve land and encourage the renewal of farming generations, as illustrated by the recent discussion of a draft law on such issues at the French National Assembly. However, the question remains as to what public policy levers are available to achieve this renewal. Who should govern farmland? What land policies are likely to encourage agro-ecology and food relocalization? This is a debate in France, but also in other developed countries (Calo et al., 2022; Wittman and James, 2022).

France is recognized internationally for its proactive national agricultural policies established in the 1960s and robust regulation of the land market, through institutions such as the Safer, a private land agency with a public service mission to monitor and intervene in the land market in favour of the local development of agriculture. However, the French government currently faces challenges in adapting its long-standing legal and regulatory instruments to new societal challenges (e.g. financialization of agriculture) and demands (e.g. for local and quality food and environmental protection). Alternative farming communities and grassroots movements have been advocating for years for an ambitious reform of farmland policies (AGTER and Terre de Liens, 2018). Despite this, the current draft law on agriculture does not fundamentally challenge the hegemony of existing conventional farmers over access to land. This national impasse is linked to the historical co-governance (Kooiman et al., 2008) of farmland between the Ministry of Agriculture and conventional farmers' unions, who largely control access to land whether for rent or purchase.

Conversely, at the local level, some local authorities and farmers' or citizens' groups are actively involved in preserving agricultural land and promoting agroecological and food transitions. They identify available lands, revitalize fallow areas or public lands, and support the establishment of new farms (Perrin and Baysse-Lainé, 2020; Léger-Bosch et al., 2020). Such initiatives are however quite recent, as local governments (such as municipalities or groupings of municipalities) hold neither legal nor executive powers over the agricultural sector which are national- or EU-level fields of competence. Local authorities began to take an interest in agricultural issues via other sectors, such as the management of natural areas (1970s) or urban planning (1980s). In the 2000s, they were granted new powers in water management,

environmental protection, and economic development. In the 2010s, they undertook pioneering local food policies. Combining these sectoral competencies, local authorities are now in a position to take action on farmland itself. However, they still often lack the experience and skills to do so. They are not always aware of initiatives conducted elsewhere, and lack references when it comes to avoiding tensions surrounding land issues that may impede these agricultural dynamics. Local governments of other European countries are facing similar issues (Martin-Prével et al., 2023).

This presentation aims to shed light on the various roles played by French local governments in the management of agricultural land. It draws upon a database of 84 initiatives documented on a web platform established since 2020 by the French research institute INRAE and the community movement for access to land Terre de Liens. These initiatives involve local governments and aim to protect farmland and support farming, in particular through generational renewal of farmers. The analysis of this database reveals the diversity of agricultural land strategies taken by local governments. It allows us to identify obstacles and drivers and draw generic lessons that can support local governments willing to take action on farmland. Finally, we discuss the transformative potential of these land innovations.

Conceptual framework

This research on farmland governance is interdisciplinary and even transdisciplinary as it involves non-academic knowledge from Terre de Liens. In the interpretation of our results, institutional economics provides an analytical framework useful for grasping the evolution of formal and informal norms and their application, the situated institutional arrangements, possible blockages, and collective actions involving various types of stakeholders (Léger-Bosch and Fromage, 2023). Sociology of public action (Lascoumes and Le Galès, 2018) helps to map the coalitions of actors, arenas, instruments, and the knowledge specific to the multi-scale and multi-stakeholder management of farmland. Critical geography is finally useful to dig into the power relations surrounding local public decision-making and land property regimes (Calo et al., 2021).

Methods

Our analysis draws upon a database of 84 initiatives documented on the web platform RECOLTE.[1] This platform was established in 2020 by INRAE and Terre de Liens to gather case studies on local governments' land projects, which are documented through feedback from local actors and research studies. For each initiative, a 2-page text chronicles the project: the local authority's motivation for taking action on farmland, the stakeholders involved, the policy instruments mobilized, and the results obtained. Success drivers, obstacles, and remaining issues are also mentioned. A series of indicators provides additional information on the geographical context (plain, mountain, coast, rural, urban, peri-urban), agricultural production, players involved, political objectives, human and financial resources invested, impact in terms of surface area and number of farms. Our statistical analyses only take into account the 71 initiatives for which the indicators were complete. The qualitative analysis is based on the authors' re-reading of the 84 initiatives published on the web platform. It is also enriched by the authors' more detailed knowledge of several initiatives, gained in the framework of former research projects (Léger-Bosch et al., 2020; Perrin and Nougarèdes, 2022), or thanks to Terre de Liens' direct implication as a stakeholder in several initiatives.

Results

Five local public strategies on farmland

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[1] https://ressources.terredeliens.org/recolte

In this section, we identify five strategies that we interpret as responses to the challenge of preserving farmland from urban development, maintaining active farms, and supporting agroecological multifunctional projects.

Creating a new organic farm on public- or collectively-owned land to address the demand for local food and environment preservation

The most frequent strategy in our sample (35 cases) aims at creating one or several new farms, in order to supply more local (often organic) food. Such initiatives mostly target market gardening. The scale of such initiatives is small: one or two farms, typically on 2 to 8 ha, exceptionally more (up to 60 ha) when other productions are involved, such as small-scale livestock (poultry, pork, sheep or goat) or cereals for local processing into flour and bread. Finding the right land is the first challenge for these projects. The local authority can rent public land that is available because it is unfarmed or because the farmer already renting it is ready to step aside. However, in many cases, private land has to be purchased. In most cases, the initiative is led by a municipality. It may also emerge as a community initiative, when citizens advocate to prevent farms from being bought up by (already big) farmers. Either the local authority buys the land itself, sometimes with funding from the regional water agency when the land is located in a water catchment area. Or, the farm may be bought collectively by the citizens, for instance through the community land bank of Terre de Liens. In all cases, important resources in time and money are required before the new farm starts. It includes the diagnosis of soil quality, the writing of a call for projects, the selection of the candidate farmer, and often also investments in fencing, water access, land clearing, etc. if the land was not farmed before.

Such initiatives face several recurring issues: finding/financing farm buildings besides the land, justifying the scale of public resources allocated to the creation of a single farm (when neighboring farms or other businesses may struggle to survive), and integrating the new farmer in the local farmers' community, when such initiative has been managed only by the local authority and alternative farming associations such as Terre de Liens.

Territorial schemes to support the local renewal of farms

In order to avoid the critics related to the first strategy (focusing on the creation of a single farm), and help more new farmers gain access to land, some local authorities dedicate resources to set up a generic territorial scheme aimed at supporting the renewal of farms. Such initiatives (n=15) are often led by large supra-local authorities, such as metropolises, territorial associations of rural municipalities (*Pays ruraux*) and provinces (*départements* in French, European NUTS3 administrative unit). We grouped in such category of strategies: land observatories, designed to identify available land and facilitate the flow of information between retiring farmers and prospective farmers; farm incubators, where new farmers can "try out" farming for up to three years with specific support and the provision of land before setting up on their own farms; and partnership agreements between a local authority and the Safer, so that the local authority is informed of land sales and can intervene by purchasing the land (i.e. public land banking). Public land banking can be permanent or temporary – for a period of 2 to 5 years in the latter case, until a farmer is identified, has started their business, and is in a position to buy back the land.

Convincing private land owners to rent their land, for rural revitalization

For 20 cases, the rationale for community action is rural revitalization. Agricultural decline and land abandonment are perceived by the local authority as an issue for local economic development and landscape (spontaneous reforestation). The spatial scale of such initiatives is often large, following administrative (municipality, groupings of municipalities) or natural (massif, woodland, regional parks) boundaries. The first stage is always to map land opportunities, which implies an analysis of aerial photos and contacts with the owners (private and public) – which often takes years. Based on this diagnosis, several actions can be implemented: negotiations with owners to convince them to rent their land to farmers, involving

sometimes specific instruments – e.g. collective land associations, or vacant property procedures whereby the local authority becomes the owner. These actions are often supported by local development funding from the provincial (*département*) and regional councils, and sometimes from the EU (European Regional Development Fund). The main difficulties are the reluctance of private landowners and, once a plot of land is available for farming, the lack of funding to further support investment in creating a new farm (land engineering, buildings, and so on).

Agrarian landscape as a local heritage to be preserved from land pressure

In some areas, the issue is not the risk of land abandonment due to rural decline but the pressure on agricultural land due to non-agricultural uses. There, the will to preserve landscapes that have been shaped by agriculture for centuries justifies that a given authority goes beyond negotiations with (often absentee) landowners and the creation of land associations and proceeds to actually acquire the threatened farmland. Such strategies (n=7) were found especially in peri-urban areas with high urban pressure (around Paris for *Ile-de-France Nature*), in very touristic mountain areas (*Conservatoire de Haute-Savoie*), and on the coast (close to Montpellier, *Conservatoire du littoral*, *Conseil départemental*). In all these cases, the provincial or regional authority, or a public national agency, buys tracts of land and rents part of them at a low price to farmers, with specific clauses to preserve the landscape and the environment.

Preserving farmland from urban development

The largest initiatives (n=7) in terms of surface aim at preserving land from urban development. Municipalities or a group of neighboring municipalities delimit in their local land-use plan a perimeter dedicated to exclusive farm use, forever. Such perimeter cannot be changed by the local authority itself: it requires the approval from the provincial or national government. Such very long-term agricultural zones range from 14 to 12,000 ha (around Lyon). They have proved to be efficient to avoid speculation on farmland in peri-urban areas, and favor farmers' investments in the land. They require a multi-year procedure and may be politically risky, as landowners lose definitively their building rights without any financial compensation. Most successful initiatives of this type have been led by large local authorities, in partnership with conventional farmers' organizations. Sometimes, they are just the first step of a long-term agricultural strategy, with the local authority then preempting farmland, supporting the creation of new farms, or funding collective actions of farmers included in the protected perimeter.

In some cases, these five strategies may only be a first step to carrying out more actions on farmland. In a peri-urban context, preserving farmland from urban development is a prerequisite to support any local development of agriculture. In deprived and declining rural areas, the first action aims rather at creating new coherent plots of farmland on abandoned farmland. In both geographical contexts, after having achieved these first steps, some local authorities will dedicate more public funding to supporting the creation of new farms (for instance, by buying land and funding land engineering or paying for agricultural extension services). The growing awareness that local authorities cannot provide the same level of support to every new farm can also lead to consider a wider scale of action, with territorial schemes to support the renewal of farms.

Generic obstacles and drivers

We identified fundamental cross-cutting conditions that characterise these different strategies: they include the commitment of elected representatives (mentioned in 53 initiatives), the availability of enough public funding (mentioned in 45 cases), the need for one person to ensure the long-term supervision of the strategy, either within the local authority (technician or elected representative) or within an external organization paid for this service (39 cases). The partnership between the public body and several farming organizations is mentioned as a key driver for success in 44 cases, while it is mentioned as missing or conflictual in 22 cases.

Beyond the formal partnerships are also mentioned the role of informal networks, effective coordination, agency and trust and transparency between all stakeholders. Private landowners are especially identified as an effective barrier in 18 cases (difficult to reach, reluctant to rent their land). While they often lack agricultural skills and experience, local public governments have also to deal during such initiatives with the coexistence and confrontation between different agricultural models (Perrin and Baysse-Lainé, 2020; Gasselin et al., 2023). Long administrative procedures are also recurring obstacles (19 cases). Urban planning takes time, as does the creation of a new farm. Local authorities must anticipate these long, but different, timeframes, and phase their objectives, plan successive steps, so as not to face a loss of collective momentum and political risk. Finally, the context may also impose specific challenges (32 cases), when land is fragmented in micro-properties, is under urban pressure, or with limited agronomic potential (soil texture, water access).

Discussion and conclusion: what transformative potential of local initiatives?

Farmland has gained a place on local public agendas

The number and the diversity of initiatives gathered on this web platform attest that the issue of farmland has gained some visibility on political agendas and that some local authorities feel legitimate to take action on this matter.

Our results first confirm the range of solutions and operational approaches in the hands of local governments, which can act as regulators (with land-use planning, land market regulation), landowners (mobilization and effective management of public land), and facilitators in local land systems (Martin-Prével et al., 2023). They also confirm that local authorities now act on farmland with diverse partners, including more and more alternative farming organizations such as Terre de Liens, beyond the Safer and Chamber of agriculture (Perrin, 2022). Without any legal powers on the agricultural sector, (groupings of) municipalities combine their formal competences on urban planning, environment and water management, and develop new skills and more ambitious strategies on farmland in the framework of local food policies (Liu et al., 2024). We also identified recurring obstacles and drivers which are valuable to support local governments in formulating tailored land strategies, engaging with relevant stakeholders, and better aligning the timelines of public policies with those of farmers.

Of course, taking action on farmland takes time (several years) and some initiatives fail. The scope of our results is limited by the data, which are neither exhaustive nor representative. INRAE and Terre de Liens have tried to cover on the RECOLTE web platform a large diversity of regions and strategies, they have started with success stories to demonstrate the feasibility, and have always asked for the approval of local authorities before publishing the initiatives on the platform. Some cases of unsuccessful actions had thus to be dismissed, even though an analysis of the reasons for these failures would be particularly enlightening for other communities. This is a perspective for future research.

Nevertheless, we can say that a wider range of local authorities are currently taking up a new role in farmland management in France. While urban and peri-urban governments were already identified as pioneers of such strategies in the literature (Baysse-Lainé et al., 2018; Perrin and Baysse-Lainé, 2020; Léger-Bosch and Fromage, 2023), our results show that small rural villages are also engaged with similar objectives. They allocate public land to create new farms and some have been fighting for decades against farmland abandonment. The RECOLTE platform and this study may hence help them to gain further recognition for their actions, in the scientific literature and in networks of local governments. Besides municipalities and groupings of municipalities, already well addressed in the literature, this study also points to the complementary role of supra-local authorities: provincial and regional administrative levels, and other public bodies (natural parks, territorial associations of rural municipalities).

Better understanding the interactions between such levels of public action in the governance of farmland would however require future research, and more qualitative in-depth case studies.

What impact on the use of land and agroecological and food transitions?

The spatial impact of such local initiatives on farmland is often limited to a few hectares, except for the delimitation of new large long-term perimeters dedicated to exclusive farm use in land use plans. Such limited spatial impact echoes other studies on public farmland in France (Perrin, 2017; Baysse-Lainé et al., 2018) or Belgium (Vandermaelen et al., 2022), putting into question the amount of public resources invested on limited surfaces. Most French farmland is still private and farmed by conventional farmers (Sovran et al., 2023). The transformative potential of such initiatives lies hence more in their replication (scaling out), their institutionalisation (scaling up) and the dissemination of new principles of land management (scaling deep) (Moore et al., 2015).

In the French locked-in context, with conventional farmers' unions largely controlling the market of productive farmland and marginal access for new alternative farmers (Baysse-Lainé and Perrin, 2021; Horst et al., 2021), our initial hypothesis was that local authorities could only act on abandoned or less productive farmland. However, our large sample of initiatives shows more nuanced results. Indeed in productive, intensive, market-oriented farming regions, local authorities can hardly buy more than abandoned farmland, or farmland with low productivity. The competition on the land market is mainly taking place among farmers. Buying farmland to promote an agroecological transition requires compromises with conventional farmers, and a formal partnership with the local Safer. Local authorities' initiatives nevertheless do impact productive farmland when they allocate (sometimes fertile) public land or when they protect farmland from urbanisation. In more rural, mountaneous regions, they work on all types of land, including abandoned farmland, but in frequent partnership with the local Safer and Chamber of agriculture (Ardèche, Lozère, Vosges). A perspective for future research would be to take into account the political orientation of the local authorities engaged on such farmland initiatives, to see its impact on the stakeholders and type of farmland involved.

In conclusion, our research confirms that local authorities have found diverse ways to gain new roles in the local governance of farmland in France, despite the absence of support from the state and the frequent opposition of conventional farmers' organizations. The central state does not support local authorities on such topics. It lets them undertake initiatives without giving them the means (legal, financial), or offering them even a framework for consistency or political recognition. This could be interpreted as a withdrawal of the state, a neo-liberal turn, or more simply the pursuit of a policy of co-governance with conventional farmers' unions, which domination was confirmed during the demonstrations of farmers at the beginning of 2024. In such a context, local authorities, farmers' and citizens' groups will have to find other ways to advocate for an agroecological and food transition, and a new governance of farmland, at national and European levels.

Bibliography

AGTER, Terre de Liens, 2018. *Préserver et partager la terre*. Paris.

Baysse-Lainé, A., Perrin, C., 2021. Inequities and relations of domination in farmland management in France through the prism of justice foncière and land justice. *Justice spatiale | Spatial Justice.*

Baysse-Lainé, A., Perrin, C., Delfosse, C., 2018. Le nouvel intérêt des villes intermédiaires pour les terres agricoles : actions foncières et relocalisation alimentaire. *Géocarrefour* 92. https://doi.org/10.4000/geocarrefour.10417

Calo, A., McKee, A., Perrin, C., Gasselin, P., McGreevy, S., Sippel, S.R., Desmarais, A.A., Shields, K., Baysse-Lainé, A., Magnan, A., Beingessner, N., Kobayashi, M., 2021. Achieving Food System Resilience Requires Challenging Dominant Land Property Regimes. *Frontiers in Sustainable Food*

Systems 5.

Calo, A., Perrin, C., Shields, K., Kai, S., Sippel, S.R., 2022. Land and sustainable food transformations. *Elementa: Science of the Anthropocene* Call for papers, Special Issue.

Gasselin, P., Lardon, S., Cerdan, C., Loudiyi, S., Sautier, D. (Eds.), 2023. *Coexistence and Confrontation of Agricultural and Food Models: A New Paradigm of Territorial Development?* Springer Netherlands, Dordrecht. https://doi.org/10.1007/978-94-024-2178-1

Horst, M., McClintock, N., Baysse-Lainé, A., Darly, S., Paddeu, F., Perrin, C., Reynolds, K., Soulard, C.-T., 2021. Translating land justice through comparison: a US–French dialogue and research agenda. *Agric Hum Values* 38, 865–880. https://doi.org/10.1007/s10460-021-10202-4

Kooiman, J., Bavinck, M., Chuenpagdee, R., Mahon, R., Pullin, R., 2008. Interactive governance and governability: an introduction. *Journal of Transdisciplinary Environmental Studies* 7.

Lascoumes, P., Le Galès, P., 2018. *Sociologie de l'action publique.* Armand Colin, Malakoff, France.

Léger-Bosch, C., Fromage, M., 2023. Le portage foncier de terres agricoles au nom d'intérêts publics et collectifs : une diversité d'arrangements institutionnels. *Économie rurale* 383, 85–106. https://doi.org/10.4000/economierurale.11099

Léger-Bosch, C., Houdart, M., Loudiyi, S., Le Bel, P.-M., 2020. Changes in property-use relationships on French farmland: A social innovation perspective. *Land Use Policy* 94, 104545. https://doi.org/10.1016/j.landusepol.2020.104545

Liu, T., Melot, R., Wallet, F., 2024. Integrating land and food policy to transform territorial food systems in the context of coexisting agri-food models: Case studies in France. *Elementa: Science of the Anthropocene* 12, 00063. https://doi.org/10.1525/elementa.2023.00063

Martin-Prével, A., Maristany Bosch, N., Swade, K., 2023. *Local Authorities Making Farmland Work for the Public Good.* GitBook made within the framework of the RURALIZATION project.

Moore, M.-L., Riddell, D., Vocisano, D., 2015. Scaling Out, Scaling Up, Scaling Deep: Strategies of Non-profits in Advancing Systemic Social Innovation. *The Journal of Corporate Citizenship* 67–84.

Perrin, C., 2022. *La terre au prisme de la territorialisation de l'action publique. Pour une géographie du foncier agricole pour tous* (Habilitation à diriger des recherches en géographie et aménagement). Université Paris Nanterre, France.

Perrin, C., 2017. Mobiliser la propriété publique en faveur de l'agriculture périurbaine ? Le cas de la région de Montpellier (France). *VertigO - la revue électronique en sciences de l'environnement.* https://doi.org/10.4000/vertigo.18401

Perrin, C., Baysse-Lainé, A., 2020. Governing the coexistence of agricultural models: French cities allocating farmlands to support agroecology and short food chains on urban fringes. R*ev Agric Food Environ Stud* 101, 261–286. https://doi.org/10.1007/s41130-020-00105-z

Perrin, C., Nougarèdes, B., 2022. An analytical framework to consider social justice issues in farmland preservation on the urban fringe. Insights from three French cases. *Journal of Rural Studies* 93, 122–133. https://doi.org/10.1016/j.jrurstud.2020.07.007

Sovran, C., Ruffier, F., Blin, N., Desriers, M., Guéringer, A., Martin, T., Wagner, H., 2023. L*a propriété des terres agricoles en France* (Terre de Liens No. 2).

Vandermaelen, H., Dehaene, M., Tornaghi, C., Vanempten, E., Verhoeve, A., 2022. Public land for urban food policy? A critical data-analysis of public land transactions in the Ghent city region (Belgium). *European Planning Studies* 0, 1–22. https://doi.org/10.1080/09654313.2022.2097860

Wittman, H., James, D., 2022. Land governance for agroecology. *Elementa: Science of the Anthropocene* 10, 00100. https://doi.org/10.1525/elementa.2021.00100

PAPER SESSION 3.B
STRATEGIES OF MOVEMENT BUILDING

Thinking through landscape frictions: unlocking the transformative power of permaculture projects

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Thinking through landscape frictions: unlocking the transformative power of permaculture projects

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Permaculture pledges for a food system based on intimate relations with the land and with the diversity of its human and non-human inhabitants. Whereas permaculture design is most of the time applied on small plots of agricultural lands, it has the potential to inspire an agroecological vision of spatial planning and territorialized imaginaries for the future of the socio-ecological production landscapes. Because permaculture design is still applied only on sparse plots of land, it provokes marginal but conflictual transformations of the landscapes. I designate those as "landscape frictions". To explain this concept, I introduce two study cases in Switzerland, which illustrate the opportunities and challenges faced by permaculture, intentionally "disturbing" the agro-industrial landscape. While permaculture design is still poorly understood by professional farmers and institutional land-use planners, permaculture places should be considered as key levers to impulse democratic, multi-actors and multispecies sustainability transformations to the agrifood system. This article suggests considering them as "transactional places": territorialized leverage points from where actors with diverging views can meet, share and experiment innovative visions for the future of the agrifood system and the renewal of planning.

Keywords: Permaculture design; agroecological care; landscape frictions; multispecies planning; transactional places.

The challenges of ecologizing agricultural landscapes one plot at a time: two narratives from the Swiss permaculture movement

Despite the scientifically proved urgency to ecologize the agrifood system to slow down the drastic decline of agrobidiversity and the continuous increase of ppm in the atmosphere, some necessary transformations seem 'locked-in', for several reasons: the weight of traditions and legacy, rigid agrarian identity, and technological path dependencies (Pellizzoni, Centemeri, 2022). In fact, some past choices constrain today's possibilities to experiment novel methods and take different directions or the future. This phenomenon has been designated as "agricultural involution" because it progressively rigidifies through excessive internal complexity, thereby compromising its future evolution (Geertz, 1963). From those reproductive dynamics arise conflicts, when some people experiment with alternative visions and methods just next to the farmers supporting the conventional model (Chakroun, 2020).

Permaculture is one of the most radical agroecological alternatives developing worldwide (Hathaway, 2015). Permaculture refers to a design method infused by an ethics of care towards food and non-human entities, embodied through innovative ecological farming practices and spread through a transnational social movement (Centemeri 2019; Ferguson, Lovell, 2014). It is organized as an emerging network of geographically dispersed places experimenting with alternative ways of designing the land and shaping a political vision of sustainable living (Chakroun, 2019).

Two study cases from the Swiss permaculture movement are narrated below to illustrate those socio-territorial dynamics. The first case is a small highly diversified permaculture farm in the Rhone valley in the Alps. The landscape of the region is marked by countless lines of industrial fruit monocultures (apricot, pear, apple), whereas the permaculture farm has been evolving towards a lush edible forest, where a large diversity of plant and animal species intertwine and mingle. The neighboring farmers complained to the local authority and accused the permaculturist of 'breeding' pests. The second case rather narrates a local experimentation with agroecological urbanism in Lausanne city. A large permaculture project was realized thanks to a political will to 'ecologize' the 900 hectares of agriculture lands owned by the Municipality. After the retirement of the couple of conventional farmers renting a thirty-hectare

farm from the city, Lausanne opened a call for tender to re-assign the land to a project with socio-ecological dimensions: organic farming, direct distribution, and the creation of an educational garden. Those two study cases aim at highlighting the transformative power of permaculture: by confronting conventional farmers to the feasibility of more ecological alternatives, permaculture places are obliging them to reflect on their own decisions and practices. Hence, those places should be considered as opportunities to stimulate debates beyond the alternative/conventional dichotomy (Lamine, 2015), on the remaining possibilities of desirable multispecies futures for the territory. This stance assumes that, whereas the ecological futures of the agrifood system should be negotiated beyond the limits of each individual farm, typically by following the contours of bioregions (Magnaghi, 2014), they would gain relevance to be designed and enacted from the fringes of the territory (Cogato-Lanza, 2005), for the latter are the scene of prefigurative experimentations, innovative questionings and repolitization of food landscapes.

Narrative of landscape frictions 1: The Permanent Gardens: enclaves of multispecies coexistence in the Rhone valley

The Permanent Gardens (*Les Jardins permanents*) is the name of a small permaculture farm composed of 5 plots, totaling 2.5 hectares, located in the upper part of Rhône Valley, in the canton of Wallis – some plots in the valley, some others on the hillsides. The project was initiated in 2001 by the trained landscape gardener and permaculture pioneer, Hubert de Kalbermatten, on former conventional fruit production lands. In fact, the landscapes of the valley are known for their intensive monocultures of apples, pears, apricots, and grapes (vineyards) and Hubert's plots are surrounded by orchards cultivated with conventional (industrial) methods.

When he started, Hubert faced the challenge of acquiring arable lands. In fact, the Swiss agriculture law is very strict on the conditions of eligibility to access farmlands, whether under a lease of contract of sale: an official agriculture training diploma is required. Still, even without holding that certificate, Hubert succeeded to validate his long experience as landscape gardener and to obtain the certificate needed to acquire the plots he cultivates today.

Figure 1 : The forest-like farm of Permanent Gardens, from above and from the inside. The plot is surrounded by conventionally cultivated lands (greenhouses and fruit monocultures). Source: Hubert de Kalbermatten, 2021

Now the farm consists of a highly diversified permaculture farms with several "ecosystems" [fig.1]: an edible forest garden, intertwining old fruit trees he decided to keep and newly planted high-stemmed fruit trees, a small sheep breeding station, a bamboo forest to feed the sheep, and a large greenhouse with vegetables and chicken. In 2011, as the project grew, Diane, his partner, joined to help managing the farm and care for the sheep.

The farm soon became one of the most well-known permaculture farms within the Swiss permaculture movement. Many permaculture activists and local organic farmers temporarily took part in courses and workshops and gained inspiration for their own project.

While this could appear as a success story, the Permanent Gardens became the "scene" of regular conflicts with neighboring farmers. As the landscape was changing, progressively becoming an apparently unmanaged forest, resembling less and less to the surrounding parallel lines of industrial fruit monocultures. The changing landscape aesthetics crystallized the divergence of worldviews and stances on how to care for the non-human inhabiting the farms.

The most telling example is the denunciation of Hubert's practices by his neighbors, accusing him to breed vermin in his forest, and especially to provide a refuge for codling moths (*Cydia pomonella*). Those moths are well-known to fruit arboriculturists, and highly infamous for the damage their larva cause to apples and pears, making them unmarketable. Hubert responded that their monoculture of fruits, even if treated with pesticides, are more likely to offer a "haven" for pests, by offering them infinite lines of food. In fact, the anthropologist Anna Tsing explains how proliferations is caused by the system of plantations: "Imagine the feast […]: an endless meal of helpless and identical prey " […] Plantations do more than spread pathogens; they also cultivate them (2017, 59).

Local and regional authorities (commune and canton) had to help on several occasions to facilitate their interactions and find compromises. Still, several permaculture practitioners today encounter similar problems with neighboring farmers. Thus, beyond the question of who is responsible for the proliferation of codling moths, this example shows that the scale of the plot or of the farm is not adequate for thinking about and propelling transformation of the agricultural model in a way that integrates both the principles of agroecology and the constraints linked to food production. and marketing, such as the management of pests - or rather of non-humans who are not directly beneficial to marketing. What are the territorial units and scales that are relevant to implement the agroecological transition and experiment with multispecies agrifood systems?

Narrative of landscape frictions 2: Rovéréaz suburban farm: the challenge of designing a common agroecological future for Lausanne city

The Rovéréaz farm is an agroecologically innovative project located in the Northern part of the city of Lausanne and extending on 28.5 hectares. It started in 2016 and was made possible through a unique multiactors configuration and a long tradition of city-farm collaboration. The land has been the property of Lausanne City since 1988, leased to a couple of professional farmers who has always been welcoming school classes and provided educational activities. When the couple retired in 2015, the Municipality, at the time runed by the Green Party, decided to give an ecological impulse and launched a particular call for tender, in a quest to transform the farm into "a crossroads for exchange with the population, particularly around food sovereignty, and a center of innovation for organic suburban agriculture" (Lausanne city, n.d.). Hence, there were five main conditions for eligibility to ensure an organic and desirable future for the land: organic production; local distribution (intention to supply school canteen and urban markets); farm education activities for urban residents; facilitate the socio-economic integration of marginalized people; protection of the landscape and the site's scenic qualities.

The winning project proposed several 'revolutions', which all constituted challenges for the feasibility and sustainability of the novel model. The first revolution is that it is led, not by a couple, but by a group of five people in their thirties, demanding several legal arrangements. The group contained only one professional agriculturist; the others had backgrounds in environmental sciences, social welfare, associative life, and ecological activism – this diversity of profiles is the second revolution. The third is the inspiration they got from permaculture holistic design and their willingness to experiment a more-than-organic model: with highly diversified crops, soil health improvement, natural pest management, and forest-like garden.

Figure 2 : Rovéréaz suburban farm (black line) and the permaculture garden (red rectangle). Source: Dugua & Chakroun, 2019.

The strict conditions imposed by the city were however complicated to satisfy: an organically labelled, commercial farm with financial pressure on production does not easily match the requirement to welcome frequently urban people and children. The project was soon split into two substructures: the professional farm on most land (28ha), and an educational permaculture garden on a small, but progressively growing parcel of 2000, then 4000 and finally 6000m^2 [fig.2]. That garden became highly popular and gathered more than 1000 people over the first six months, while the professional farm stayed discreet and known only from the clients purchasing its products every Saturday morning in Lausanne daily market. Their differences became visible in the landscape [fig.3] – with, on one side, perfect lines of organic vegetables and cereals harvested with a tractor, and, on the other, experimental colorful, even poetic associations of edible and non-edible plants, harvest by hand and sold on a trustful pay-what-you-can basis. Growing divergences emerged between the two substructures cohabiting on the same land: their unlike sources of income; their stance of biodiversity; their stance on local community engagement; their use of agriculture mechanization, their relative compliance with the state's agriculture policy. Those micro-scale divergences reflect deeper landscape frictions and raise several questions about the conditions of possibility to impulse converging territorial trajectories at a regional, even national scale: what is the responsibility of the Municipality, in the facilitation of such transition, beyond the sole leasing of lands with unrealistic constrains? How can regional planning give a strategic role to such socially and ecologically innovative places in the future development of the territory?

Figure 3 : Difference of agricultural landscapes coexisting within Rovéréaz farm. On the left, lines of organic-labelled vegetables; on the right, the highly diversified permaculture garden. Source: Leila Chakroun, 2021.

Conclusion: a reverse territory perspective: plan the future of the agrifood system with/from territorial margins?

The places designed with permaculture principles contribute to recreate dialogues between territorial actors that long 'ignored' one other. Even if their radical stance of the necessary revolutions of agricultural *ethos* and *praxis* are source of frictions, permaculture places oblige transformations in the relationship with conventional farmers, institutional and non-institutional stakeholders, and citizens. In the first study case narrating the semi-wild edible forest of Hubert, the landscape is playing in key role in provoking debates. The neighbors who had no interest in permaculture were so surprised by the progressive 'forestation' of that plot of land that they came to the permaculturist, offering them occasions to both explicit their vision and ways of dealing with food production and pest management. The second narrative on the permaculture community garden located within a professional organic farm highlights both the transformative power of citizen-driven initiatives, *and* the issue of 'translating' agroecological principles to organic professional farms that respect the strict standards of the label and adopt different agronomic strategies to ensure their economic viability.

Imagining the future of the agrifood system *from* territorial edges and cultural margins might lever not only transformation in agricultural practices but also in spatial planning and territorial policies. Cogato-Lanza (2005) pledges for a "reverse territory" perspective, which is nothing less than an epistemological revolution, denouncing the lack of consideration for open, suburban, agriculture spaces and their consequent devaluation, even destruction through urban sprawl. Similarly, Aragau and Toublanc (2020) criticize the urban-centric perspective of strategic planning and suggest giving special attention to the 'edges', and make them a heuristic tool to favor agriurbanism and multifunctional composite landscapes. Tornaghi and Dehaene (2021) go even further in their proposal of an "agroecological urbanism", which implies not only to give more spaces to agroecological experiments within the city, but to abandon the capitalist axioms that have been shaping our territories and opt for agroecological principles and advocacy planning.

While permaculture places have long been neglected and even disdained, the urgency of transformations the agrifood system must now lead to a reconsideration of their values, as they have already gained experiences in the challenges and potentials of agroecological vision and practices. Even from (and thanks to) their interstitial position (Lévesque, 2013), they serve as "transactional places" (Dugua and Chakroun, 2019): territorialized leverage points from where actors with diverging views can meet, share and experiment innovative visions for the future of the agrifood system. It's time that regional authorities recognize this potential and open "hybrid forums" to collectively revise land-use and agricultural policies to remove the lock-in and support the emergence of new narratives for sustainable food planning.

Bibliography

Aragau, C. and Toublanc, M. (2020) 'La lisière : un outil de la fabrique agriurbaine. Lecture francilienne', *Territoire en mouvement, Revue de géographie et aménagement*, (44-45). https://doi.org/10.4000/tem.6334

Centemeri L. (2019) *La permaculture ou l'art de réhabiter*, Versailles: Quae.

Chakroun L. (2020) 'La permaculture au sein des dynamiques territoriales : leviers pour une mésologisation de l'agriculture suisse romande', *Développement durable et territoires* (Vol. 11, n°1). https://doi.org/10.4000/developpementdurable.14784

Chakroun L. (2019) 'Cultivating Concrete Utopia: Understanding How Japan's Permaculture Experiments are Shaping a Political Vision of Sustainable Living' - *The IAFOR Research Archive,* https://papers.iafor.org/submission51957

Cogato-Lanza, E. (2005) 'Le territoire inversé,' in P. Verteegh (ed.) *Méandres. Penser le paysage urbain*. Lausanne: PPUR, pp. 117–139. https://infoscience.epfl.ch/record/113650/

Dugua, B. and Chakroun, L. (2019) 'Planifier avec le territoire : la dynamique des lieux de projets à l'épreuve des approches participatives et paysagères,' *VertigO*, 19(1). https://doi.org/10.4000/vertigo.24559

Ferguson, R.S., Lovell, S.T. (2014) 'Permaculture for agroecology: design, movement, practice, and worldview. A review'. *Agron. Sustain. Dev*. 34, pp.251–274.

Hathaway, M.D. (2015) 'Agroecology and permaculture: addressing key ecological problems by rethinking and redesigning agricultural systems,' *Journal of Environmental Studies and Sciences*, 6(2), pp. 239–250. https://doi.org/10.1007/s13412-015-0254-8

Lamine, C. (2015) Sustainability and resilience in Agrifood systems: reconnecting agriculture, food and the environment. *Sociol. Rural.* 55, pp.41–61. https://doi.org/10.1111/soru.12061

Lévesque, L. (2013) 'Trajectories of Interstitial Landscapeness: A Conceptual Framework for Territorial Imagination and Action', in A.M. Brighenti (ed.) *Urban Interstices. The Aesthetics and Politics of Spatial In-betweens.* Farnham UK: Ashgate, pp. 21-63.

Magnaghi A. (2014) *La biorégion urbaine. Petit traité sur le territoire bien commun*. Paris : Eterotopia

Pignier, N., (2017) *Le Design et le vivant. Culture, agricultures et milieux paysagers*. Saint-Denis: Connaissances et Savoirs.

Tornaghi, C. & Dehaene, M. (2021) 'Embracing political agroecology, transformating sustainable food planning', in C. Tornaghi & M. Dehaene (ed.) *Resourcing an agroecological urbanism. Political, Transformational and Territorial Dimensions.* Routledge Studies in Food, society and the Environment, pp.2-11

Tsing, A. (2017) 'A Threat to Holocene Resurgence Is a Threat to Livability', in M. Brightman & J. Lewis (ed.), *The Anthropology of Sustainability*. New York: Palgrave Macmillan, pp.51-65. https://doi.org/10.1057/978-1-137-56636-2_3

PAPER SESSION 3.D
URBAN
FOOD
ENVIRONMENTS

Food desert of alternative consumption spaces in European cities

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Food deserts of alternative consumption spaces in European cities

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This study aims to identify the baseline situation of food deserts of alternative consumption spaces that have no or limited access to current Alternative Food Initiative (AFIs) within 12 FUSILLI* cities Living Lab (LLs) borders before the implementation of LLs projects. 'At the core of FUSILLI project, there are 12 LLs in 12 different cities, whose main objective is to develop urban food plans within their local contexts to achieve an integrated and safe holistic transition towards healthy, sustainable, secure, inclusive and cost-efficient food systems.

Keywords: Food deserts, Alternative Food Initiatives, FUSILLI project, Living Labs, sustainable food system

Introduction

Food deserts is a term referring to geographic areas where access of residents to affordable, healthy food is restricted or non-existent due to varied reasons such as the absence of affordable grocery stores within walkable distance. This study aims to identify the baseline situation of food deserts of alternative consumption spaces that have no or limited access to current Alternative Food Initiative (AFIs) within 12 FUSILLI* cities Living Lab (LLs) borders before the implementation of LLs projects. 'At the core of FUSILLI project, there are 12 LLs in 12 different cities, whose main objective is to develop urban food policy and plans within their local contexts to achieve an integrated and safe holistic transition towards healthy, sustainable, secure, inclusive and cost-efficient food systems. The selection of AFIs is based on the quality and ecological concern of accessible food.

The methodology of the research relies on buffer (radius) technique that calculates Euclidian distance from the geographical location of a food space in ArcGIS. The buffers corresponding to the accessible service area of a food space are calculated based on 400m and 800m radius from the AFIs locations representing the 5-minute and 10-minute walking distance. The borders of the calculation are determined to FUSILLI Living Lab borders consisting of AFIs, which differs from city to city that is the whole city in some cases or a neighbourhood border area for some others.

Methodology

The data used in this study is primarily collected for studies and Tasks which are done in FUSILLI project and tasks are leaded by Izmir Democracy University in cooperation with 12 European cities. Data primarily depends on the geographical locations of AFIs which are alternative consumption spaces to represent affordable healthy food spaces in each city. We have detailed the types of initiatives and organizations under six categories which are as follows.

- Alternative production spaces

- Alternative consumption spaces

- Conventional consumption spaces

- Alternative governance spaces

- Alternative procurement and processing spaces

- Alternative waste management spaces.

The dataset used for food deserts only encompasses the second category which is alternative consumption spaces. The category is detailed and exemplified with some examples e.g., consumer cooperative, ecology collective, buyers' club, etc. To gather information from FUSILLI cities, online workshops and face to face workshops were held between 2021 and 2023.

Also, we collected data with the names and locations of all the initiatives by use of ; (1) web based sources research in 13 languages including English and local languages of FUSILLI cities, (2) scan of all the presentations and documents that are provided by cities and other partners in FUSILLI Project Share Point (next-cloud), (3) found some alternative initiative network websites for some cities (such as Rome), scanned news and social media accounts of international networks such as URGENCI and (4) used the data gathered by cities in MURAL platform by finding locations of those initiatives. Based on the buffer methodology, each project has 480000m2 (with 800m radius) accessible service area at most. Beside we can define that how much LL projects in each city decrease the food desert area (in both % and in area m2).

Food deserts in the nexus of quality turn: a new approach through alternative food initiatives

Food deserts are defined as areas where people have limited access to a healthy and affordable food (Chen & Clark, 2013; Beaulac, Kristjansson, & Cummins, 2009; Smets, Cant, & Vandevijvere , 2022). Also, the term "food desert" conjures the image of citizens far to reach nearest fresh food market (Khazan, 2017). It is common in the literature that food deserts are associated with low-income households and with low-income neighbourhoods ((FAO, Milan Urban Food Policy Pact and RUAF, 2018). Clearly, the previous discussion in the practical and theoretical studies have mostly focused on the physical aspects, income groups and relevant socio-economic structure to define food deserts. Only few studies have put concern on the quality of food and its relationship with food deserts. Also, the "quality turn" and its relationship with food deserts is a new discussion field that is centric value-added strategy of "paradigm change" related to Alternative Food Systems (AFSs) with ecologically embedded successor to the modernization paradigm of rural development (Goodman, The quality 'turn' and alternative food practices: reflections and agenda, 2003). The discussion on food swamps, which are defined as a geographical area with adequate access to food retail, but that also features an overabundance of exposure to less healthy food and beverages (Chen & Gregg, 2017) and its relationship with food deserts are relatively new. The Alternative Food Initiatives (AFIs) where quality concerns are important and at the forefront, appear as an important spatial and social strategy in reducing both food deserts and food swamps.

The literature and research about food deserts focus on all kind of retail and wholesale food sale units, all types of stores and restaurants, etc. On the other hand, the discourse arises with food swamps underline the "healthiness" of the food reached by citizens, which brings the question of quality turn. The quality turn discussion which came to the agenda with AFS, may have the potential to turn food deserts to food oases (Sitaker, et al., 2020; Kato & McKinney, 2015) or to eliminate food deserts (Goodman, DuPuis, & Goodman, 2012).

This research brings a new approach to solve the problems of food deserts and food swamps through alternative food initiatives. More clearly, approach of this study to food deserts develops a novel model that analyzes food deserts in relation to accessibility of AFIs. The

selection of AFIs is based on the quality concern of AFS and its ecological concerns. The food deserts are determined by calculating the domain of food retailers and other food sale units to households. Different studies calculate the length of the domain (one mile, one kilometre, etc.) in different measurements. The household areas which are not located in the hinterland of the food sale units are accepted as food deserts. On the contrary, those areas that are not urban concentrated areas are not considered as food deserts. This study takes the basis of walking distances which are 400 meters (5 minutes) and 800 meters (10 meters). The 5 minutes walking distance is the standard for disadvantaged groups such as elder, kids and disabled. 10 minutes walking distance shows adult walkable distance [tab. 1]. Thus, the methodology relies on buffer (radius) technique that calculates Euclidian distance from the location of a food space in ArcGIS.

Distance	Reference	Examples	Description
>0,08 km (0,05 miles) Households without vehicles	Ver Ploeg et al. (n.d.)	Households without a vehicle that are far more than 0,05 miles than a supermarket.	Paper analyses several studies to find the pros and cons of measuring food store access
>1,6 kms (1 mile) in urban areas for low-income households		Low-income census: low access is defined as more than 1 mile from a supermarket or large grocery store in urban areas and as more than 10 miles from a supermarket or large grocery store in rural areas	
>16 kms (10 miles) in rural areas for low-income household			
Low and High Incomes:		For low- and high-income census tracts. Three measures for rural and urban tracts:	
>1,6 km (1 mile) urban and >16 kms (10 miles) in rural		1 mile from the nearest store (urban) and more than 10 miles in rural areas	
0,08 km (1,22 miles) Households without vehicles		The two other distance measure use a 0,05 miles demarcation in urban areas and 10 miles in rural areas, or 1 mile in urban areas and 20 miles in rural areas	
>1,6 km (1 mile) urban and >32 kms (20 miles) in rural			
0,08 km (0,05 miles) without a vehicle		A fourth measure directly considers household vehicle availability. Under this measure, a tract is considered low access if a significant number of households without vehicles are more than 0,05 miles from a supermarket or a significant number or share of people more than 20 miles from a supermarket	
>32 km (10 miles) with a share vehicle			
0,08 km (0,05 miles) healthy tracts		2009 State Indicator Report on Fruit and Vegetables called the Healthy Tract Measure considers whether healthy food retailers are within 0,05 miles boundary	
1,96 km (1,22 miles) Households without vehicles in less dense urban areas		There are 13 different standards for how far is "too far" from a grocery store. For example, the benchmark distance determining limited supermarket access areas (LSA) in the densest cities is 0,15 miles. Thus, a block group that is 0,2 miles from a supermarket could be considered an LSA. In comparison, residents of less-dense cities or less-dense areas of the same city may not be considered low-access unless they are more than 1,22 miles from a supermarket. So, household without vehicles in a very dense city would be considered low access only if it is >1,22 miles to a store, whereas a household without a vehicle in a very dense city could be considered low access if it is more than 0,15 miles from a store (13 different areas consider area-level measure of vehicle availability, but not individual vehicle ownership)	
0,24 kms (0,15 miles) household without vehicle in very dense urban areas			
>0,08 km (0,05 miles) Households without vehicles (outside of walking distance to a store)		The Food Access Research Atlas (FARA) includes a low-income and low-access measure that is applied consistently across the entire USA, regardless of urban and rural status. This measure considers census tracts where a significant number of households are without a vehicle and more than one-half mile to a store. The tracts where a significant number or share of residents are more than 20 miles	
>32 kms (20 miles) outside a reasonable driving distance to a store			

		from a store (outside a reasonable driving distance to a store) as low access	
1,5 to 3 square feet. Walking distance		Research shows that the average square footage of grocery retail for the entire city of New York is 1,5 square feet per capita, which would translate into most of NYC being underserved by a grocery retail using the 3 square feet benchmark	
0,08 km (0,05 miles) buffer		There is no standard definition of what constitutes an inadequate distance to a store. A study estimates the median distance of the population to a supermarket as 0,9 miles. Median distances were shorter for people with low incomes (0,79 miles compared with 0,94 for higher income) and much shorter for households without vehicles (0,41 miles compared with 0,9 for households with vehicle). The CDC's tract definition uses the 0,05 miles buffer around a tract to designate stores that are "near" a tract. These distinctions may be reasonable from an empirical standpoint, may have precedent in literature, and may conceptually be straightforward.	
1,27 km (0,79 miles) low-income household			
1,5 km (0,94 miles) higher income households			
1,45 km (0,9 miles) with vehicles			
4 kms from small area to healthy food outlets	Khazan (2017)	RHFA is calculated as a proportion of healthy food outlets within 4kms from each small area. Different buffer sizes could be used depending on policy targets (e.g. improve the RHFA within walking distance), study region characteristics (e.g. compactness), and characteristics of the local population (e.g. private car ownership)	How the food environment changes over time.

Table 1: Elaboration of food deserts in the literature: Source: Authors' search, elaboration and categorization

Results and Discussion

For 12 FUSILLI Living Lab (LL) cities, the acreage of LL borders and the acreage of accessibility buffers (400m and 800m) are calculated in ArcGIS. Further, the area of food desert in urban populated areas within LL border is calculated for each [fig. 1].The involved cities are San Sebastian (Spain), Nilüfer (Turkey), Oslo (Norway), Kolding (Denmark), Turin (İtaly), Kharkiv (Ukraine), Differdange (Luxembourg), Tampere (Finland), Rijeka (Croatia), Castelo Branco (Portugal), Athens (Greece) and Rome (Italy).
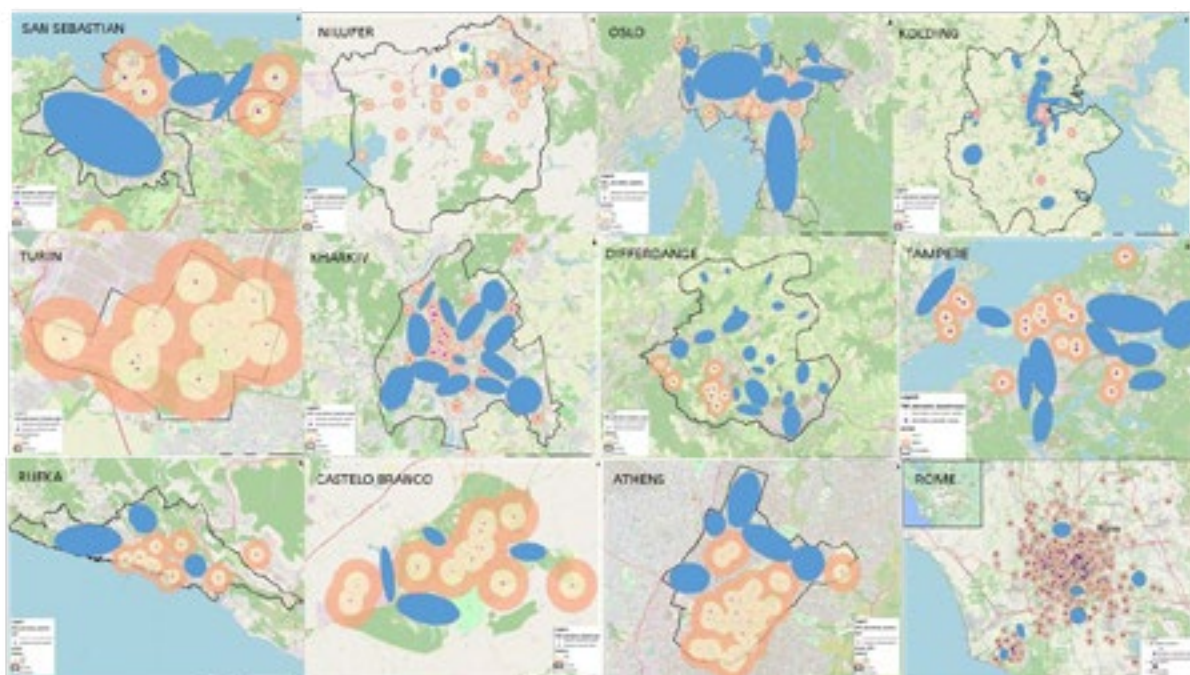
Figure 1: Representation (blue circles) of food deserts before LL implementations of FUSILLI project. Source: Authors

City LL	Area of LL border (km2)	Accesible area in 400m (km2)	Accesible area in 800m (km2)	Food desert area (km2)	Food deserts area vs LL border area (%)
San Sebastián	60	2.5	5.26	10.2	17
Nilufer	186	17.22	44.075	9.5	5.10
Oslo	115	4.5	12.16	73.5	63.91
Kolding	605	5	17	43	7.10
Turin	8	19	52	0	0
Kharkiv	344	25	63	51	14.82
Differdange	138	4	8	18	13.04
Tampere	523.4	16	42	76.45	14.60
Rijeka	43.4	7	18	10.76	24.79
Castelo Branco	1438.19	24	66	2.47	0.17
Athens	38.96	15.5	22	10	25.66
Rome	1285	124	230	72	5.60
Average					**15.98**

Table 2: Analysis of food deserts results in the 12 FUSILLI LL cities. Source: Authors

We compare food deserts within each city LL borders by calculating the percentage of food deserts area vs the total LL border area. The average percentage of food deserts area in the 12 cities is almost 16% of the LL border area.

A special remark may be appointed in Turin and Castelo Branco due to their low food deserts area percentage. In Turin, its LL is limited to a specific neighborhood of the city and not the entire municipality, therefore their AFIs are more centralized and no food deserts are found there. On the other hand, Castelo Branco LL is represented as the whole region and is not limited just to the municipality but most of that area is uninhabited thus not beign considered as food deserts. If these two exceptional cases are not considered, the average percentage of food deserts area increases almost to 20% in the other10 FUSILLI cities

Oppositely, Oslo is the city with higher percentage of food deserts. In this case, Oslo drew its LL borders around the entire city but located its AFIs in three specific areas of the city, thus obtaining a large percentage of food deserts due also to the high population density out of those three specific zones.

No other correlation has been found between the number of food deserts and size of the LL, population or geographic location of the LL within Europe.

Conclusion

Almost 16% of LL areas in 12 cities are food deserts for alternative consumption spaces. Further research is needed to compare the results of food deserts after the implementation of new alternative consumption actions in FUSILLI Project.

Acknowledgement

References

Beaulac, J., Kristjansson, E., & Cummins, S. (2009). A Systematic Review of Food Deserts, 1966-2007. (A105, Ed.) Preventing Chronic Disease. Public Health Research, Practice and Policy, 6(3).

Chen, K., & Clark, J. (2013). Interactive three-dimensional geovisualization of spaceetime access to food. Applied Geography (43), 81-86.

Chen, T., & Gregg, E. (2017). Food Deserts and Food Swamps: a primer. National Collaborating Centre for Environmental Health. Vancouver: National Collaborating Centre for Environmental Health.

FAO, Milan Urban Food Policy Pact and RUAF. (2018, July). Milan Urban Food Policy Pact Monitoring Framework July 2018 Version. Retrieved June 2023, from FAO Food and Agriculture Organization of United Nations: https://www.fao.org/3/CB4040EN/CB4040EN.pdf

Goodman, D. (2003). The quality 'turn' and alternative food practices: reflections and agenda. Journal of Rural Studies(19), 1-7.

Goodman, D., DuPuis, M., & Goodman, M. (2012). Alternative Food Networks. Knowledge, practice and politics. London and New York: Routledge.

Kato, Y., & McKinney, L. (2015). Bringing food desert residents to an alternative food market: a semi-experimental study of impediments to food access. Agricukture and Human Values(32), 215–227.

Kelly, B., Flood, V. M., & Yeatman, H. (2011). Measuring local food environments: An overview of available methods and measures. Health and Place, 17(6), 1284-1293.

Khazan, O. (2017, December 28). Food Swamps Are the New Food Deserts. Retrieved August 2023, from The Atlantic: https://www.theatlantic.com/health/archive/2017/12/food-swamps/549275/

Misiaszek, C., Buzagony, S., & Freishtat, H. (2018). Baltimore City's Food Environment: 2018 Report. John Hopkins Center for a Livable Future. Baltimore: John Hopkins Center for a Livable Future.

Sitaker, M., Kolodinsky, J., Wang, W., Chase, L., Van Soelen Kim, J., Smith, D., . . . Greco, L. (2020). Evaluation of Farm Fresh Food Boxes: A Hybrid Alternative Food Network Market Innovation. Sustainability, 12(24), 10406, https://doi.org/10.3390/su122410406.

Smets, V., Cant, J., & Vandevijvere , S. (2022). The Changing Landscape of Food Deserts and Swamps over More than a Decade in Flanders, Belgium. Sustainability, 19(21), 13854.

Ver Ploeg, M., Dutko, P., & Breneman, V. (n.d.). Measuring Food Access and Food Deserts for Policy Purposes†. Applied Economic Perspectives and Policy, 37(2), 205-225.

PAPER SESSION 3.E
FOOD PROCUREMENT, REDISTRIBUTION AND WELFARE

Re-imagining foodspaces-welfare nexus across scales: building proximity networks

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Re-imagining foodspaces-welfare nexus across scales: building proximity networks[1]

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Recently, researchers highlighted how diseases and inequalities built by the contemporary food system express and spatialise themselves differently worldwide, prioritising extreme conditions while shedding light on their material expression, territorial distribution, and urban planning responsibilities in drawing these geographies. This contribution aims to underline forms of food poverty in contexts where the phenomenon is turning again into a structural issue, even though less extreme. Italian contexts well represent this condition (the case study of Trieste, in the Friuli Venezia Giulia region, will be considered in this contribution), where recent global crises are indeed increasing the number of people in poverty, considered in its multifaceted dimensions. In this context, the emergence of downscaling micro-strategies and practices represents a potential prime mover towards more structured welfare strategies and politics. On the other hand, micro-strategies and practices could be upscaled through interconnections among foodspaces and between these and the city. Three case studies are thus analysed to underline foodspaces' potential in generating welfare networks. In these examples, residential and domestic spaces are reconfigured in strict relation to urban spaces, designing urban infrastructures for collective care. Considering these premises, the main objective of this contribution is to unveil foodspaces potential as potential devices towards the welfare re-territorialisation.

Keywords: foodspaces, welfare strategies, proximity networks.

Food as a central dimension of poverty. An introduction

Among the various challenges of the contemporary world, in the last decades, research started recognising the food system as a potential key driver of the transition towards more liveable, sustainable, and just cities (Pothukuchi, Kaufman, 2000; Feagan, 2007; Morgan, 2009). Recently, research highlighted how diseases and inequalities built by the contemporary food system express and spatialise themselves differently worldwide, underlining unbalances in power relationships (Patel, 2007). The emergence of food-accessibility disparities at a global scale led to prioritising the examination of north-south divides as they constitute their most clear representation, underlining the need to delineate strategies and actions for the Global South, which then gradually reduced the number of people in food poverty[2]. The combined climate change, Covid-19 pandemic and Ukrainian conflict crises recently raised the number of people globally facing food hunger in recent years[3], exacerbating existing inequalities. Then, research gradually started investigating the Global North context, giving first attention to extreme conditions again, such as well-known studies on food deserts and connected marginalisation in North America (Coppola, 2012). Despite the specificity of the geographical and social situation, it represents a turning point in the food system-spatial justice nexus perspective. It, therefore, contributed to highlighting its material expression and territorial distribution as well as urban planning responsibilities in drawing these geographies.

These premises suggest the need to deepen the study of the above phenomena and to explore their diverse forms in those contexts where, even though food poverty is less extreme, understanding its impact and distribution seems ever more urgent. What geography emerges

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[2] The percentage of people in hunger decreased globally from 12.1% in 2005 to 7.5% in 2017 (https://www.fao.org/hunger/en/).
[3] E.g., after 2015, the Prevalence of Undernourishment indicator (i.e., the percentage of the population with insufficient habitual food consumption for maintaining an active and healthy life, as defined by FAO) started increasing up to 8.0% in 2019, 9.3% in 2020 and about 9.8% in 2021 (FAO *et al.*, 2022, p. 11).

from such a food poverty exploration in these contexts? Which other forms of poverty can be related to it? What role can foodspace play in intercepting these fragilities?

From food poverty to foodspace as a fragility-interceptor space

In recent years, in many wealth contexts of the Global North, poverty has arisen again as a structural issue (Maino, Lodi Rizzini, Bandera, 2016). In 2022, in Italy, people living in poverty were 9.4%, while fifteen years before, the phenomenon affected only 3%[4] (Caritas Italiana, 2023). In its 2023 summary report, Caritas Italiana[5] highlights the increasing poverty's multidimensionality in Italy. Therefore, more than half of their users manifested at least two levels of need, the most common of which are economic fragility, occupational and housing uncertainty, familiar issues, physical and mental health, and migrations.

In this context, the city of Trieste (in the Friuli Venezia Giulia region, north-eastern Italy) represents an interesting case study for exploring the foodspace-welfare nexus. Therefore, Trieste's socio-geographical conditions – such as the close presence of the national border and the geographical marginal position in the Italian context – exacerbate some of its fragilities concerning the various dimensions of poverty. At the same time, an existing network of actors, spaces, and practices is intercepting and trying to reduce poverty through foodspaces. This network also represents a fertile and active social and spatial tissue to be studied, implemented, and informed by case studies from other contexts.

Poverty as a multifaceted question

In recent years, in the city of Trieste, the number of people living in fragile states increased (Caritas Trieste, 2022; Fondazione Luchetta, 2023) and chronic[6] and intermittent[7] poverty persisted[8]. Despite the historical widespread of services for fragile people[9], this condition suggests the partial inability of existing urban welfare services to intercept poverty's multiplicity. Indeed, the contemporary world's complexity provides a multifaceted photograph of poverty-related fragilities and makes the phenomenon even more jagged. At the same time, this condition represents a design opportunity in which poverty-related fragilities' spatialisation can inform welfare spaces' typology, organisation, and location in the urban context. Making visible the diverse levels of poverty is thus central to urban design and planning and reviewing the phenomenon through its multiple facets.

Among Caritas Trieste's data (2022), some aspects seem particularly relevant to the design question. Firstly, the relationship between health and poverty: the increase of over-55 people in poverty is strongly related to health issues, introducing socioeconomic and healthcare conditions leading to premature ageing. Secondly, solitude and social isolation affect people who are usually already in a fragile state, and this is particularly intense for the large number of elderlies living in Trieste[10], with more than a quarter experiencing solitude (Tonero, 2023). In addition, the 850 minors within the families supported by Caritas Trieste also introduce the relationship with education as they are more likely to encounter discriminating and cognitive difficulties as adults. Moreover, other contemporary phenomena – such as the energy crisis and the persistence of food poverty – further stress fragile situations. Finally, the presence of asylum seekers and people in transition represents an additional level of fragility, increasing uncertainties in unveiling the fragile urban social tissue and, consequently, in building effective human- and place-based strategies for an (at least partial and tentative) solution.

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[4] Since the beginning of 2022, the increasing number of Ukrainian citizens significantly increased poor people's percentage. However, even excluding this effect, they amount to 4.4% (Caritas Italiana, 2023).

[5] Their task is to promote personal development and social justice, particularly for people in fragile states.

[6] People supported for at least five years.

[7] People living on the verge and unstably independent are more fragile in relation even to events of a small entity, which could make them easily return to poor conditions.

[8] This affects 48% of the more than 5000 people contacting Caritas' listening centres (Caritas Trieste, 2022).

[9] E.g., with the Habitat Microaree programme (https://habitatmicroaree.online.trieste.it/).

[10] The city's population average age is more than 48, with 265 over-65 people/100 under 15 (https://www.istat.it/it/files//2022/03/Focus_Censimento-permanente-della-popolazione_Friuli_Venezia-Giulia.pdf).

Foodspaces: existing practices in Trieste

Therefore, food poverty is only one of the various fragility dimensions affecting the contemporary condition. In Trieste, the progressive development of diversified food micro-strategies and practices underlines the gradual emergence of multiple forms of poverty as a potential design core for the foodspaces-welfare nexus, whose main actors are parishes and associations. Some of their practices do not seem to impact space, such as food surpluses redistribution to families in poor conditions by the *Trieste recupera* association[11]. On the other hand, some actions occur in public spaces and temporarily but regularly transform them, such as the case of *Montuzza* friars'[12] practices – distributed in baskets and usually consumed in informal open spaces close to their church – and the *Linea d'Ombra* voluntary organisation[13], distributing food to asylum seekers in the train station square.

Furthermore, Caritas Trieste is a central organisation in the urban food-redistribution network. Indeed, it disposes of structures specifically dedicated to food processes and takes resources from institutional funds, food banks, private donations, and distribution surpluses. Recently, it started articulating and differentiating its services and spaces, attempting to respond to various poverty, fragility, and marginalisation forms. At least three foodspaces are central to diffusing different spatial answers, integrated by some practices (e.g., food package distribution) and equipment (e.g., the means of transport for food distribution) with no spatial impact. The first space, the kitchen, is where they prepare meals for both individuals or families living in Caritas' residences and homeless people. The second space, the refectory, is the main consumption space, a low-threshold facility located in the building close to the kitchen. Users are mostly asylum seekers and people in transition, while residents represent a small percentage. Thanks to the contact between users and volunteers, the refectory also constitutes a central space for intercepting and addressing other needs – such as health issues and solitude[14]. Finally, the solidarity emporium is a small supermarket where residents (in this case, mainly working poor) can buy food by paying with a 'points card' whose value depends on the household size and income. Free choice and autonomy are central to this space's idea, enabling people to purchase and transform food independently within their houses. In the emporium, distribution is thus the central food phase, while transformation and consumption happen elsewhere.

It seems thus now relevant to highlight how existing food micro-strategies and practices suggest the need for integration with other actions, practices, and actors within the city. Therefore, this process could generate a progressively diffused and differentiated network of place-based practices, where foodspaces should play a central role. Which new spaces could progressively help diversify the response to multiple fragility-related necessities?

Two questions, three case-studies

Two issues seem thus emerging as central matters. The first one questions which welfare politics could effectively support new inclusive and accessible forms of inhabitation, where the collective act of caring should result from democratic and collective negotiation among inhabitants. The second core matter investigates the spatial dimension, investigating possible design strategies for creating original forms of coexistence starting from food. Foodspaces could thus come out of house boundaries intertwining with the city and start organising and configuring complex urban infrastructures for collective care (Bassanini, 2008; Belingardi, Castelli, 2019; Davis, 2022; Chincilla, 2022; Marinelli, 2002; 2015).

Three case studies are thus analysed, in the attempt to shed light on some possible tentative solutions rather than outlining a final answer. Selected projects seem particularly relevant due to the central but different roles foodspaces and practices play in spatialising inclusive,

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[11] Literally 'Trieste recoups': https://www.triesterecupera.it/home.
[12] https://www.montuzza.it/mensa-dei-poveri/.
[13] https://www.meltingpot.org/tag/linea-dombra-odv/.
[14] As emerged during an informal interview with Caritas Trieste Foundation (January 2024), solitude as a reason for attending the refectory concerns people in transition and asylum seekers as well as residents, especially the elderly.

affordable, and innovative politics through the project. At the same time, the proposed case studies represent different interpretations of foodspace as a broader urban infrastructure for collective care, potentially extending beyond the domestic while influencing and organising urban spaces (Puigjaner, 2019; 2023).

The solidarity restaurant

In Milan, the Ruben restaurant[15] hosts disadvantaged people by selling dinner for 1 euro. Its simple but playful environment helps valorise the donation of a meal and dignify the act of receiving it. The restaurant was built as the core element of *Oltre il cibo*[16], a social housing and professional reinsertion project within the *QuBì* programme[17], whose main objective is reducing food poverty. The core project idea is decreasing inhabiting uncertainties through consumption spaces, overcoming the concept of the solidarity restaurant as a concluded project. The house then constitutes an opportunity to build virtuous networks for territorial care, employing economically and socially disadvantaged people. The *Spazio Aperto e Servizi* and *Cascina Biblioteca* cooperatives thus collaborated within the *Giambellino 143* project to renovate and comply five flats – two- and three-room apartments within mixed blocks of flats (i.e., including both private and public housing) – while involving and hiring ten restaurant users. In 2018 the flats' renovation and compliance were completed, providing different forms of inhabitation. The first, composed of two flats, houses families in extreme poverty with babies. The second space, made of two other flats, gives social hospitality during emergencies and is thus characterised by a high resident turnover. Finally, the Municipality suggested a family for occupying the fifth flat.

Within this project, the organisation of the kitchen is independent of the private dwelling's reconfiguration. Despite this, it is central to generating a territorial solidarity network offering accessible inhabiting solutions to socially and economically disadvantaged people, involving privates, public actors, and associations.

The collective kitchen

Cabanon de Symon is an inclusive housing project sustained by the French government and built by the *Simone de Cyrène* association, in Marseille. Within its houses, people with and without disabilities live together in a community progressively opening to other neighbourhood dwellers. This is the case of Evelyn and René, two elderlies living in an apartment in front of the inclusive housing project. *Cabanon de Symon* is both a collective kitchen and a space for creativity and socialisation. The environment is simple and flexible, with transparent glass walls encouraging visibility between built and open spaces. The well-known architect's organisation Collectif Etc.[18] designed the project and managed its construction site, which included a participating process involving *Cabanon*'s inhabitants in the kitchen building process.

Three main elements are central to the organisation of its spaces. The first – the most intimate environment – consists of about 30 square meters, including a small kitchen area, and a bathroom. However, the second space represents the core element for inclusion. Indeed, the collective kitchen fosters gathering, exchange, and convivial practices. Painted wooden panels cover one of the walls and can be transformed into tables when needed. The third element is the relationship with the neighbourhood, facilitated by the overlooking towards the street. *Cabanon*'s proximity space – a footpath along a residential street – is often the theatre of food preparation and consumption. The street thus becomes a place for sharing everyday practices, both among the *Cabanon*'s inhabitants and between them and others. Even though the design purposes did not consider this street use explicitly, urban proximity represents a central aspect

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[15] It was built by the Pellegrini Foundation in 2014 within the Giambellino neighbourhood in Milan.
[16] Literally 'beyond food', the project was supported by the Pellegrini Foundation, Ruben Volunteers Association, *Spazio Aperto Servizi* (literally, 'Open Space Services') Social Cooperative, and Cariplo Foundation.
[17] In 2017, the Cariplo Foundation founded the programme (https://ricettaqubi.it/ricetta-qubi/), sustained by Intesa Sanpaolo and the Foundations Peppino Vismara, Romeo ed Enrica Invernizzi, *Fiera Milano*, and Snam.
[18] http://www.collectifetc.com/realisation/le-cabanon-de-simon/.

of the proper realisation of the project. Preserving and developing social relationships and dwellers' autonomy is encouraged by public transport stops, stores, and services proximity.

The urban farm

La *Ferme du Rail* is an agro-urban space in Paris connecting agricultural production, work, residences, and professional reinsertion practices for fragile people. A multidisciplinary group[19] promoted the tangibly utopian farm project, including various types of spaces for responding to social and environmental issues and offering new forms of inhabitation. The organisation of the agro-urban system consists of private residences guaranteeing both intimate and private spaces and collective environments allowing and fostering gathering activities. The first space, the farm, employs about twenty people in addition to residents, working in productive greenhouses, a mushroom bed, and permaculture, aquaponics, and sack farming plantations. Secondly, the residences include fifteen accommodations for housing fragile and under professional reinsertion people and five further houses for students. Central architectural and urban design devices are tables in open spaces, transparent glass walls allowing the sight to the affordable restaurant's inner spaces opened to the street, and – on the upper floor – greenhouses where raw materials for the kitchen are grown. Underneath the restaurant, a tiny wooden building houses approximately twenty people under professional reinsertion and students from the Breuil school, the *École des Ingénieurs de la Ville de Paris*, and the *École Speciale d'Architecture*. The open spaces' design involves a wide range of materials promoting biodiversity and guaranteeing sustainability[20], with particular attention to recycling resources[21] and practising composting.

The ethics of relationship-centred care is dominant, highlighted as a necessary condition for inhabiting the planet while reciprocally relating to humans and other living beings. Ecological construction principles enrich the project from the architectonical viewpoint while constituting a virtuous environment for people working and living within its spaces. Moreover, the project's social engagement is well represented by some associations involved (the *Travail et Vie* association works for the professional reinsertion of precarious, and the *Bail pour Tous* association for guaranteeing fair and high-quality dwellings to people in difficulty).

Partial conclusions and perspectives

Intertwining the Triestine case study with analysed projects provides some elements informing new foodspaces-welfare nexus' interpretations. Some questions seem particularly relevant to overcome the traditional idea of food poverty towards the concept of foodspaces as fragility-interceptor spaces.

The foodspaces-welfare nexus: some elements for new perspectives

The first matter questions the foodspaces' role in reinventing the welfare-dwelling connection. On the one hand, the examples show how guaranteeing the "right to food" (Rodotà, 2014) is central to intercepting other fragility dimensions while generating virtuous processes such as professional reinsertion. On the other hand, when food preparation, consumption, and sharing spaces are central, inhabiting actions can develop collaborative and care-oriented practices.

In the welfare renovation process, overcoming the tight relationship between the right to food and food poverty is central. Recognising food practices as intrinsic caring communities' generators is thus fundamental for a foodspaces' change of perspective from charity-oriented to enabling- and collective care-centred, capable of intercepting the multifaceted dimensions of poverty as a foodspaces-welfare nexus' core question. Going beyond the reuse rhetoric represents an intermediate but necessary step, now strictly correlating the struggle against food poverty through food surpluses' redistribution. This step is fundamental for at least two

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[19] The project won the Reinventing Paris programme launched in 2003 by the Municipality to promote restoration projects. It involved socially committed associations, architects, and landscape designers (https://www.fermedurail.org/).
[20] E.g., using recyclables or requiring low maintenance.
[21] E.g., recovering rainwater and reducing water consumption.

reasons. Firstly, if reducing losses within the whole food system is a sustainability objective, food surpluses' relevance within redistribution practices seems at least inconsistent. Secondly, this rhetoric challenges marginalised people's enabling processes, emphasising their dependence on what the food system throws away.

The spatial dimension of enabling processes: multiple scales

The second issue informs the spatial dimension and its potential role in guaranteeing enabling processes across various scales. At the architectural scale, the analysed projects focus on thresholds rather than private spaces. Even though intimacy and privacy need to be ensured also in collective housing structures, the threshold between shared environments and the spaces beyond them is thus fundamental. Moreover, sharing spaces' accessibility is central in both the *Cabanon* and the *Ferme du Rail* projects. In the first case, *Cabanon*'s transparent glass walls – facing the street and the walking path – design a fordable threshold, where community practices occasionally dump beyond inner spaces within the neighbourhood. In the second case, the *Ferme di Rail*'s terrace – a hybrid space, which is also an access and a collective space – is the threshold towards the affordable restaurant. While revealing the productive activities happening inside, it also constitutes the physical relationship between the urban context – on top of the difference in height within the site – and the lower level, consisting of the horticulture space and the home's access. Even though making the kitchen visible is necessary, the minute reconfiguration of thresholds as transitional spaces between the various inhabiting dimensions (intimacy-sharing; individual-collective; collective-public) is crucial.

At an urban scale, the partially centralised organisation of the Triestine foodspaces' network suggests a dual interpretation. From the management viewpoint, this is certainly the most effective and economically sustainable since it reduces distances and makes their foodspaces recognisable. However, in overcrowding periods – especially in summer, when the migration flow is more intense – their foodspaces tend to lose their social and fragility-interceptor role due to the high users-volunteers ratio. This condition suggests a widespread distribution within the urban context as more effective in answering to diffused and diversified forms of fragility, marginalisation, and poverty.

Between public, private, and mediating actors

The third question concerns the role of actors. Both the analysed projects and the Triestine network's urban organisation suggest the need for public administration involvement within these processes. Therefore, this is necessary for overcoming the single operator's understandable economic sustainability viewpoint while implementing its resources and prioritising social-based spaces' diffusion. The democratic negotiation of caring thus reaffirms the need for a strong public actor's agency in increasingly complex muti-actor processes. Its potential impact should involve, for example, reconfiguring balances between actors, creating alliances with privates, finding ways in legislative intricacies for experimenting with innovative forms of welfare and producing innovative spatial rootings of shared and democratic dwelling.

Even though public actors are necessary, the case studies show how strong mediating actors are central to emplacing caring spaces. Their agency guarantees and promotes emplacing practices of collective care, overcoming the construction process. On the one hand, mediating actors are fundamental to ensuring spatial design and realisation. On the other hand, they also safeguard the democratic sharing of caring practices while preventing excessive interferences with intimate dwelling. In the case of France, central figures for guaranteeing the process fulfilment are the *bailleur social* – a lessor specialised in social house building and managing and authorised to ask for subsidies and funding – and the 'care supervisor'.

Authorship attribution

'Food as a central dimension of poverty. An introduction' and 'Partial conclusions and perspectives': Sara Basso and Camilla Venturini. 'From food poverty to foodspace as a fragility-interceptor space': Camilla Venturini; 'Two questions, three case studies': Sara Basso.

Bibliography

Bassanini, G. (2008) *Per amore della città. Donne, partecipazione, progetto*, Milano: Franco Angeli.

Belingardi, B., Castelli, F. and Olcuire, S. (eds.) (2019) *La libertà è una passeggiata. Donne e spazi urbani tra violenza strutturale e autodeterminazione*. IAPh Italia. Available at: http://www.iaphita-lia.org/wp-content/uploads/2019/11/laliberta%CC%80_BelingardiCastelliOlcuire_pag-sin-gole.pdf (Accessed: 1 June 2024).

Caritas Italiana (2023) *La povertà in Italia secondo i dati della rete Caritas. Report statistico nazionale 2023*. Available at: https://www.caritas.it/wp-content/uploads/sites/2/2023/06/sintesi_re-port_2023-Def.pdf (Accessed: 20 May 2024).

Caritas Trieste (2022) *VI Giornata Mondiale del Povero*. Available at: https://caritastrieste.org/wp-content/uploads/2022/11/VI-GIORNATA-MONDIALE-DEL-POVERO-Caritas-Trieste.pdf (Accessed: 20 May 2024).

Chincilla, I. (2022) *The caring city. Health, economy and environment*, New York: Actar.

Coppola, A. (2012) *Apocalypse town. Cronache dalla fine della civiltà urbana*. Roma-Bari: Laterza.

Davis, J. (2022) *The Caring City. Ethics of urban design*, Bristol, UK: Bristol University Press. https://doi.org/10.2307/j.ctv2jtxrfc.

FAO, IFAD, UNICEF, WFP and WHO (2022) *The State of Food Security and Nutrition in the World 2022. Repurposing food and agricultural policies to make healthy diets more affordable*. Rome: FAO. https://doi.org/10.4060/cc0639en.

Feagan, R. (2007) 'The place of food: mapping out the 'local' in local food systems', *Progress in Human Geography*, 31(1), pp. 23–42. https://doi.org/10.1177/0309132507073527.

Fondazione Luchetta (2023) *Il report 2022 del Centro di raccolta Elide*, 14 March. Available at: https://fondazioneluchetta.eu/comunicati-stampa/2023/il-report-2022-del-centro-di-raccolta-elide/ (Accessed: 20 May 2024).

Maino, F., Lodi Rizzini, C. and Bandera, L. (2016) *Povertà alimentare in Italia: le risposte del secondo welfare*. Bologna: Il Mulino.

Marinelli, A. (2002) *Etica della cura e progetto*. Napoli: Liguori editore.

Marinelli, A. (2015) *La cura della città. Ovvero, perché una madre ne sa più dell'urbanista*. Napoli: Liguori editore.

Morgan, K. (2009) 'Feeding the city: the challenge of urban food planning', *International Planning Studies*, 14(4), pp. 341–348, https://doi.org/10.1080/13563471003642852.

Patel, R. (2007) *I padroni del cibo*. Milano: Feltrinelli.

Pothukuchi, K. and Kaufman, J. L. (2000) 'The food system', *Journal of the American Planning Association*, 66(2), pp. 113–124, https://doi.org/10.1080/01944360008976093.

Puigjaner, A. (2019) 'Bringing the Kitchen Out of the House', *e-flux*, 2. Available at: https://www.e-flux.com/architecture/overgrowth/221624/bringing-the-kitchen-out-of-the-house/ (Accessed: 31 May 2024).

Puigjaner, A. and MAIO (2023) 'Urban-K-Type', in Bassoli N. (ed.), *Home Sweet Home.* Milano: Electa, pp. 104-123.

Rodotà, S. (2014) *Il diritto al cibo*, Milano: Corriere della Sera (I Corsivi).

Tonero, L. (2023) 'Sempre più vecchi e soli', *Il Piccolo*, 8 January. Available at: https://ilpiccolo.gelocal.it/trieste/cronaca/2023/01/08/news/sempre_piu_vecchi_e_soli_a_trieste_il_264_vive_senza_nessuno_accanto-12452809/ (Accessed: 21 May 2024).

Greening school meals: towards a public food system? Case studies from Normandy (France)

— ESNAULT Morgane

Greening school meals: towards a public food system? Case studies from Normandy (France)

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With the passing of the EGalim law in 2018, French legislation aims to increase the presence of organic and quality food in collective catering. Specifically, 50% of meal composition is required to meet these quality criteria. By demanding at least one vegetarian meal option per week, the law also intentions to promote vegetarianism. This food regime not only reduces greenhouse gas emissions, but also accommodates various specific diets based on preferences, beliefs or convictions.

We investigate here whether and how local authorities responsible for school meals comply with the required reform of school meals (Morgan, 2006). This study is based on data from a long-term study (2018-2023), gathered through interviews with school chefs and local authority technicians in three regions of Normandy (France), collected for a PhD thesis.

The responsibility for school meals varies depending on the type of school, which means that multiple actors need to coordinate their efforts in the same area while developing different policies. This study presents the local policies and their effects on school meals and food planning. For example, the Normandy regional authorities support the development of legume crops, in order to increase the plant-based meals in school food. However, this type of food is not used in the primary school meals, as it is not under the same authority. This calls for local food governance, which is partly provided by territorial food plans. In this study, we will demonstrate that this kind of council does not provide a sufficient coordination, as it does not systematically include the schools' chefs. Furthermore, local elected representatives may not always be motivated to alter the food regime, or may only request an increase in locally-sourced food (Caune et al., 2023). However, this does not address the requirement for a more just food system (Born and Purcell, 2006; Slocum et al., 2016). Private actors, such as entrepreneurs, grocers, or local chefs, can have a more significant impact on food systems than the public authorities by developing intermediate food tools, such as logistics platforms or vegetable processing units. Their involvement in local governance varies depending on their willingness to participate.

Different policy levels are involved in school food procurement and we want to understand how they can be made more efficient, particularly through dialogue with local authorities and sharing our results. How they respond will implement the conclusion of this proposal.

Keywords: school food catering, food justice, rural areas, public policies

Introduction

The EGalim law, enacted in 2018, is the first piece of legislation to propose a real framework for quality other than nutritional quality regarding school food in France. Although the law has been well received overall, and has led to an increase in the proportion of organic and labelled products on school canteens' plates, it is not always understood because there is little support for its implementation. The absence of proximity in the law is still being debated. What's more, there is not enough support for the labelling of agricultural sectors to ensure that there is enough supply to meet demand. As a result, wholesalers are favoured, offering labelled products of sometimes low quality. However, the use of vegetal products on menus is an economic lever for increasing the budget and redirecting it towards quality products, but this measure also has its limits. Kitchen teams need a great deal of training in this area, in order to offer meals that are adapted to the tastes and preferences of pupils and avoid resorting to poor-quality vegetarian substitutes. The vegetarian option also helps to make menus more inclusive by eliminating controversial foods. However, it is not always accepted by pupils' parents, who may see it as an ideology imposed on their children in the face of the meat diet (Caune et al., 2023).

The aim of this study is to analyse how those responsible for the provision of school meals determine whether and how they can implement a more sustainable approach. Additionally, the potential implications, resistances and conflicts that may be created by such a transition to a more sustainable food system will be explored.

Firstly, the methodology employed in this study will be outlined, followed by an examination of the implementation of the vegetarian meal plan by school meals teams. Finally, the role of the public in greening school meals will be explored.

School food, from needs to politics: a study in Normandy (France)

This study is based on my PhD work (Esnault, 2023), which investigated the supplying practices of the rural school meals in north-western France, in the Normandy region. Through mixed-methods, three distinct spaces where explored, each corresponding to different public management structures, while sharing similar socio-demographic characteristics. The *Cotentin*, the *Perche* and the *Vire bocage* are rural areas, home to a majority of retired workers and working-class people (blue- and white-collar workers), This demographic profile results in consumption habits that differ from those observed in central cities with higher degrees (Marie et al., 2017). The agricultural orientation of these areas is characterised by a specialisation in dairy and meat products, as well as cereal growing (meant for exportation and animal consumption).

About ten educational establishments and kitchens were visited in each of the aforementioned locations, which varied in size, accessibility and management. The chefs constituted the largest proportion of those interviewed, followed by the managers of the schools and those of the central kitchen. The data collected in these interviews contributed to the mapping of the food flows by GIS to each of the investigated spaces.

This particular topic examines the relationship between the food school public system and the transition to a (partially) vegetarian diet, employing social geography tools and the food justice framework. The social demand and the need for an ecological transition place the vegetarian diet as part of a solution, as implied by the legislation. Moreover, as the schools welcome all students from a wide range of socioeconomic backgrounds with different food habits, it is the only structure that can affect everyone. The final point to consider in the context of school food justice is the concept of food democracy, namely the manner in which all actors in the decision-making chain, listed in [fig. 1], consider justice when devising the menu for the school canteen.

How do schools implement the vegetarian meal plan?

The weekly vegetarian meal, which was initially an experiment, complements the introduction of thresholds for quality products in the EGalim law. However, the measure was not always well received by certain players in the system, such as the parents of pupils at the *école Brontë*, who boycotted the canteen on the days when the vegetarian meal was served. The sector manager of a catering company sums up the issues surrounding these menus very well:

"We have this situation where we have parents who say no, 'I don't want my child to eat vegetarian food', so we also have school management who say 'we're against it', so that's a hindrance. In other words, at some point we're not going to impose content on customers that they don't want. That's what the law recommends. In fact, it's an obligation" (Manager of a catering company, 2022).

[fig.1] Stakeholders in the food school public system in France. Elaborated by the author.
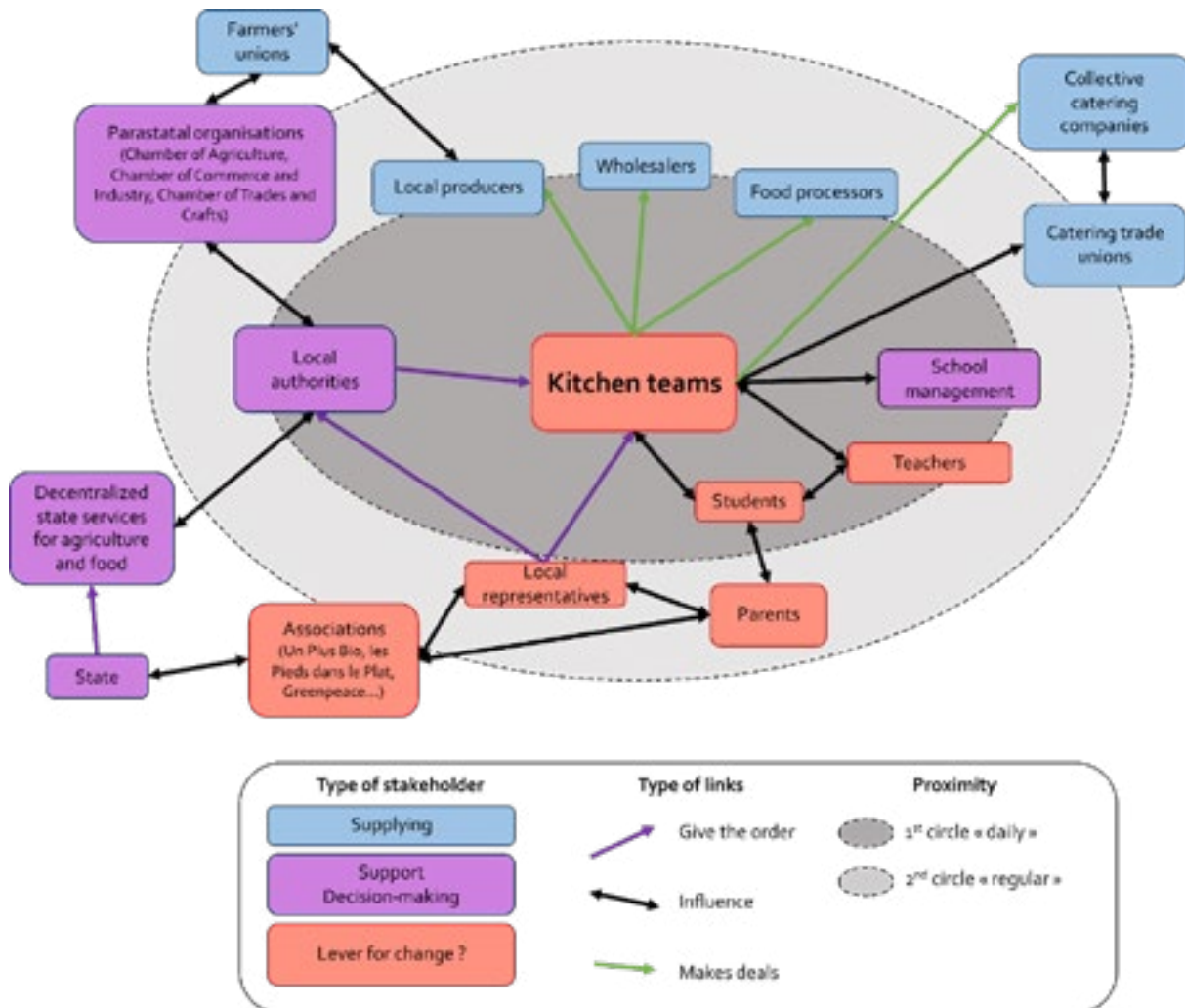
The head of the *hôpital Hermione* in the Perche region agrees when asked about what he think of the vegetarian diet:

"I don't mind it at all, I'm a big vegetable person. On the other hand, we still have the majority, 80% of people who want a piece of meat on their plate, who don't understand why their children don't have meat for lunch." (Chef to the *hôpital Hermione*, 2022).

He also points out that parents make comments and negotiate on prices, considering that a meal without meat costs less and that prices should change. He went on to explain that he had more problems with the parents than with the pupils, who ate without any problems.

The catering compagny manager interviewed also explained that children are not always aware that they are eating vegetarian food, as one of their surveys reveals:

"The first question, well, one of the questions was, 'Do you eat vegetarian? I mean in your establishment', and I interviewed a whole class, in small groups, so they didn't consult each other, and they all told me 'We don't eat vegetarian or we do from time to time, but it doesn't happen very often'. And the customer and I looked at each other and said, 'In fact, you've been eating vegetarian once a week for 5 years now', and they don't even realise it any more". (Manager of a catering company, 2022).

Conflicts and representations of the vegetarian diet

The head of the *collège Marie Harel* believes that school catering is a good way of introducing children to vegetarian meals, even if the eating habits of their social environment are quite different:

"Here, we're going to try and work on the vegetarian menus, which is going to be no easy task. Starting next week. To start with, I'm going to offer a choice of dish of the day, to get them used to it gradually, because it's a bit rural after all? I can't imagine... I can't impose it on them anyway. Otherwise they'll come and ring my bell, that's for sure... But as it's in the air at the moment... I'm practically vegetarian, so it's not a problem, but for the children it's a bit more complicated. To make a balanced vegetarian meal, um... I'm going to make them eat things that they're not necessarily... That they don't know! And it's a population... They're young! It's not that simple. But we've got some of them all the same! We've got vegetarians, we've even got a vegan, so... (Chef to the *college Marie Harel,* 2019).

The dietary standards of the working classes who make up the social spaces surveyed do not always correspond to the vegetarian proposal. This attempt to change food consumption practices is part of the food education mission that some local authorities have set themselves. However, it cannot be achieved without rethinking menus in their entirety, by compensating for certain dishes with dessert components for pleasure, for example, as explained by the catering company manager we met:

"We have now put our menus on display, which are discussed by a committee of several chefs, sector managers and dieticians, with changes being made. And we're getting very, very good feedback. The children eat pre-cooked meals, almost all of them home-cooked. At almost 100% with new flavours at the start, it's a bit surprising, but we manage to get some very good feedback because they've discovered new things. It doesn't work every time, but for example, if we make a lentil dahl. It's going to be a bit surprising at first, but we'll put a chocolate cake for dessert. In other words, we know that there are moments of comfort on the menu. And that's important because we don't want the child to go home in the evening and say to Mum: 'I haven't eaten a thing'. (...) After that, schools have an educational role, which can be, so some customers hear it, others... But in my opinion, we have to educate children about taste in nursery schools and primary schools, it's an educational role." (Manager of a catering company, 2022).

Vegetarian meals are not always a success. As the manager of the *Lucie Aubrac* central kitchen, who is not particularly in favour of it anyway, explains: "I defy you to get kids to eat plant-based proteins, with zero in the bins afterwards (...) Ah, there's room for manoeuvre, of course, there are ideals, but people aren't ready to accept them. Steak is important, so it's true that children are subject to their parents' ideals, I can understand that, but it's still not the majority today. One vegetarian meal a week, well vegetarian or vegetable protein, yes, but I didn't want to put myself in a straitjacket either (...) I'm not going to throw them into the battle like that either, I did an experiment once, a vegetarian themed menu, it was a disaster, I want the staff to be trained for it." (Manager of the *Lucie Aubrac* central kitchen, 2019).

In addition to the political dimension of vegetarianism mentioned by this respondent, the training of kitchen staff appears to be a key factor in the success of these menus. The head chef at *collège Marie Harel* explains that she trained with the organic farming interprofession, and the head chef at the *école Brontë* also mentions this training issue in the following extract:

"Mr D - I've done a bit of training, and we make our own recipes too. So, we try to find things that will appeal to them. Some meals will work better than others, that's for sure. But it's not easy to attract them.

Interviewer - You have mixed feelings...

Mr D - (laughs) I've got mixed feelings about it, but it's not part of my culture either at the start. So, you have to adapt. It comes, it comes, it progresses (...) Once a week seemed a lot to me. But then... You get into the system, it works more or less well. I think it's going to get better, in any case there's more demand. But no, it really wasn't my culture to begin with, and... So, we're trying to find recipes, bearing in mind that I don't want to use anything industrial. (...) It's quite a lot of work, but there you go, with chickpeas, lentils, things like that we manage to make things, but if it's to buy industrial I'd rather not." (Chef to the *école Brontë,* 2022).

Vegetarian dishes introduce chefs to new products and new ways of cooking. Once again, this respondent mentioned that it takes time to adapt, and that a lot of work has to be done on the menus to ensure that the children like them. The manager of the *collège Edith Piaf* also mentioned this. She went further, arguing that she refused to use industrial soya-based vegetable substitutes, which she considered to be anti-ecological:

"Interviewer - What about the vegetarian meal? Do the pupils like it?

Mrs B - For them, it's a bit like fish day, in fact, you see, before, fish day was black day. Now it's vegetarian day, which is black, so no, they don't really like it. So, we've tried to find alternatives to compensate, in other words, here we are, we're at war, it was a vegetarian meal, well, or before. Yesterday it was vegetable pizza, well, pizza's fine, it's fine. It doesn't matter what it's like, I mean what it's presented with. Here it's vegetables but it works. That's it.

Interviewer - Do you make soya bean sprouts, dishes like that?

Mrs B - Well, no, we've kind of banned all soya because clearly, it's not very good and it's not very healthy or environmentally friendly. We agree, so no, we don't do that." (Manager to the *collège Edith Piaf,* 2022).

The economic, health and ecological arguments are frequent in the respondents' comments. On the other hand, the issue of inclusiveness was less developed, except by the chef to the *collège de l'Erdre*:

"Interviewer - What do you think about the obligation to have a vegetarian option?

Chef - I think it's good, yes, it's true (…) well it's not an option, we respond to Muslims, we respond to everyone, the Hindus who don't eat beef, those who don't eat... Why shouldn't we respond to vegetarians? (...) If they want they can eat vegetarian every day in the self-service restaurant." (Chef to the *collège de l'Erdre,* 2022).

The vegetarian option thus also responds to dietary constraints linked to religious convictions, by eliminating foods that pose a problem and putting everyone on the same footing (Bergeaud-Blackler, 2014; Caune et al., 2023). The imposition of vegetarian meals, although not always adapted to pupils' tastes, is therefore multifaceted, and can contribute to situations of fairness in the face of everyone's dietary constraints. However, the legislative framework can, on the other hand, produce situations of injustice, between diners, between restaurants and their supply practices.

Local politics and food governance

In France, four levels of public governance are involved in the formulation of school food legislation and politics: the state, the region, the department and the municipality or inter-municipality. This multiplicity of levels of governance makes the coordination of local policies a challenging endeavor, with policies that may sometimes be in conflict with one another. Furthermore, the French food policies are implemented on a project basis, with the *projet alimentaire de territoire* being a key example. This form of time-limited policies does not favor the participation of blue-collar workers such as kitchen staff and is somewhat too confidential to encourage the involvement of individual stakeholders such as parents. Consequently, food democracy, a fundamental aspect of food justice, is not fully achieved through this system. Therefore, it must be reached by means of external intervention.

One case that we encountered during our investigation is particularly noteworthy. The kitchen at *école Lamarck* is operated by parents and local producers. The parents chose to take action when the quality of the food served was unsatisfactory due to the production of meals by an off-site kitchen. They took upon themselves to create an association that could make the meals on site. A decade later, the kitchen is managed by a local resident who procures food from local organic producers and purchases the remainder of the groceries from an organic food shop located a few kilometers away. This approach has enabled the service to maintain an average price despite inflation. The quality of the school food has become a factor in the decision of parents in neighboring municipalities to enroll their children in the school, as well as a factor in the decision of prospective settlers to buy a house in the area.

This example of food democracy in our study is notable for its exceptionality. The service in question is relatively small, with approximately 60 to 70 children. Consequently, the effects of scale are not as pronounced as they would be in a central off-site kitchen. While other services rely on the vegetarian diet to reallocate their budget to quality food, the *école Lamarck* staff choose to procure organic food first, and vegetarian meals second. This allows us however to feed thoughts on actions to enhance food justice in school meals [tab. 1].

Table 1: Actions to enhance food justice in school meals

	Controlling the supply chain to use quality products	Proposing conditions for inclusiveness	Coordinated management	An enhanced sector	Openness and interaction
Objectives	Taste and nutritional quality Ecological quality Social and economic quality	Fair pricing Reception conditions Food education Adapted/adaptable food options Location of school catering facilities to ensure ideal size	Up the chain Between chefs With students With political players	Enhancing the status of kitchen workers (pay, status, recognition) Fair pay for those involved in the supply chain	Disseminating good practice Communication with other stakeholders in the school catering sector
Examples of application	Developing sourcing and seller/buyer matchmaking tools Team training	Automatically allocate subsidies (from *France AgriMer*) Reinvest in on-site kitchens	Freeing up time for kitchen teams to work together	Improve remuneration conditions	Develop communications in local authority publications and the local press

The acceptance of vegetarian meals in school meals is still a long way off, with some surprising opponents. At a conference for kitchen staff held by a local authority last March, a dietician made herself the advocate of beef-based meals, as young women had to eat beef as they were losing blood each month. She then argued that in Normandy, cattle breeding is sustainable due to the extensive farming method which results in soil capture of CO_2. This type of discourse (it subsequently emerged that she was in fact remunerated by a cattle farming association) does not facilitate the transition process, and calls into question the role of local authorities in such matters.

Bibliography

Bergeaud-Blackler, F. (2015) 'L'école au défi de l'espace alimentaire halal,' *Histoire, Monde Et Cultures Religieuses/Histoire, Monde & Cultures Religieuses*, n° 32(4), pp. 103–118. https://doi.org/10.3917/hmc.032.0103.

Born, B. and Purcell, M. (2006) 'Avoiding the local trap,' *Journal of Planning Education and Research*, 26(2), pp. 195–207. https://doi.org/10.1177/0739456x06291389.

Caune, H., Frasque, F. and Persico, S. (2023) 'La politisation des cantines scolaires en France,' *Lien Social Et Politiques/Lien Social Et Politiques, RIAC*, (90), pp. 85–109. https://doi.org/10.7202/1105090ar.

Esnault, M. (2023) *Approvisionner la restauration scolaire dans les espaces non centraux : l'exemple de la Normandie. Contribution à une géographie sociale de l'alimentation*. PhD dissertation. Université de Caen Normandie. https://theses.hal.science/tel-04446165.

Marie, M. *et al.* (2018) 'Décrire et comparer les systèmes alimentaires urbains : proposition d'un jeu d'indicateurs pour onze aires urbaines françaises,' 13 December. https://shs.hal.science/halshs-02269232v1.

Morgan, K. (2006) 'School food and the public domain: the politics of the public plate,' *Political Quarterly*, 77(3), pp. 379–387. https://doi.org/10.1111/j.1467-923x.2006.00809.x.

Slocum, R., Cadieux, K.V. and Blumberg, R. (2016) 'Solidarity, Space, and Race: Toward Geographies of Agrifood Justice,' *Justice Spatiale, Spatial Justice*, (9), p. 34. https://www.jssj.org/article/solidarite-espace-et-race-vers-des-geographies-de-la-justice-alimentaire/

PAPER SESSION 3.F
ROLE OF
LOCAL
GOVERNMENTS

Navigating Urban Food Governance: Insights from Food Policy Councils in the United States

— OWEN Maureen

Navigating Urban Food Governance: Insights from Food Policy Councils in the United States

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In response to urgent socio-ecological crises and the imperative to foster resilience in our food systems, this study delves into the landscape of urban food governance in the United States, with a specific focus on the alternative governance model of Food Policy Councils at the urban scale. The research aims to introduce historical challenges of urban food planning, consider emerging participatory governance structures, and assess the efficacy of Food Policy Councils with regard to citizen participation, a critical aspect of participatory urban food governance. Exclusively focusing on the U.S., this study leverages the abundance of available detail to offer comprehensive insights into governance structures, planning processes, and implementation challenges. Starting with an exploration of urban-scale food planning in the United States, the research examines the current state, raising pivotal questions about socio-ecological justice, diverse participation, and representation. It seeks to illuminate the often-invisible dynamics within urban food policies and governing structures like Food Policy Councils. Beyond providing solely a description, the study aims to offer actionable insights into the role of planners in equitable food system planning and the potential of food councils and strategies in enhancing democratic governance, particularly amidst socio-environmental challenges. The narrative extends to touch on the overarching policy framework at federal and state scales, highlighting its impact on current challenges and obstacles at the local level. Recognizing the limitations of focusing on a singular case area, this focused approach allows for an in-depth analysis and sets the stage for future comparative studies. While rooted in the U.S. context, the study aspires to contribute insights that transcend borders, laying the groundwork for broader discussions and comparative analyses encompassing peri-urban and rural landscapes, and guiding future transformative efforts toward resilient and sustainable food systems.

Keywords: Food Policy Council, participatory governance, urban food governance, citizen participation, democratic governance

Navigating Urban Food Governance: Insights from Food Policy Councils in the United States

The urgency of addressing socio-ecological crises and fostering resilience in food systems has never been more evident than in the present day. As we navigate the complex interplay of environmental degradation, social inequality, climate change, and economic instability, the need for effective governance structures at the urban scale becomes increasingly crucial. In this context of rapid and complex change, this study delves into the landscape of urban food governance in the United States, shining a spotlight on the alternative governance model of Food Policy Councils (FPCs) operating at the urban scale and its interaction with the field of Urban Planning. By focusing our inquiry on FPCs and Urban Planning, the study aims to unravel the historical challenges of urban food planning, critically examine emerging participatory governance structures, and evaluate the efficacy of FPCs in fostering citizen participation, a cornerstone of participatory urban food governance and urban planning. Through a sole focus on the U.S., we are able to utilize a wealth of existing available detail to offer comprehensive insights into governance structures, planning processes, and implementation challenges.

Urban-scale Food Planning in the United States

Our exploration of urban-scale food planning in the United States begins with a look at the current state of urban planning, contextualized within its historical background. Historically, urban planning has predominantly followed top-down paradigms, where decision-making authority resided primarily with governmental bodies and experts (Levy, 2017). However, over time this has changed significantly, and contemporary urban planning increasingly emphasizes

citizen participation as a cornerstone, recognizing the invaluable contributions of local communities in shaping their built environments (Sharifi et al., 2023).

Transitioning from this historical urban planning context to the realm of food and food systems planning in the urban environment, we confront the stark reality that food is extremely marginalized within traditional planning frameworks. A review of the historical challenges of urban food planning reveals a landscape marked by systemic barriers and unmet needs.

Historically, urban planning has been primarily concerned with the segregation of land uses, aiming to maintain order and efficiency within urban spaces. However, this approach often overlooked the intricate connections between land use, food production, and community well-being. As a result, there has been a glaring absence of a dedicated entity within the United States to address food systems comprehensively. This absence has led to a fragmented and uncoordinated approach to food planning, characterized by disjointed policies and initiatives. The resulting chaos has left food systems vulnerable and underserved, exacerbating issues of food insecurity, inequity, and environmental degradation.

Despite the fundamental and interconnected role of land use policy in shaping food systems, dedicated food planning initiatives led by trained urban planners remain scarce across the country. Stand-alone food plans, which singularly focus on food systems planning rather than simply mentioning or including food planning as a secondary component, are notably absent from the urban planning landscape in the U.S. As an example, the 2005 Seattle Comprehensive Plan, while addressing elements of the food system, does not meet the criteria for a stand-alone food plan (Department of Planning and Development, 2005). The scarcity of stand-alone food plans prior to 2005 reflects a corresponding gap in the literature concerning food planning. While food-related issues in urban and peri-urban areas existed long before, formal recognition within planning documents emerged later. The American Planning Association, established in 1978, released its first guidance on food planning in 2007 with the APA Policy Guide on Community and Regional Food Planning (Legislative and Policy Committee, 2007). Similarly, academic research on food planning began to emerge around the same time, with much of the existing literature starting around 2008 or 2009 (Sharifi et al., 2023). While there are examples of food system literature predating 2005, the intersection of planning and food systems gained prominence around the same time as formal planning documents. Although efforts have been made in recent years to address the gap in both plans and literature, there remains much to be explored and understood in the field of food planning.

Socio-ecological Justice, Diverse Participation, and Representation

In exploring urban food governance, it is essential to include the topics of socio-ecological justice, diverse participation, and representation. Urban planning has evolved over time to play a crucial role in facilitating participation and enabling self-actualization opportunities for communities. There are several frameworks that exist within the planning literature that aim to categorize the level and quality of community participation including Arnstein's ladder of citizen participation, a key framework for contemporary urban planners (Arnstein, 1969) which is well known for moving the narrative of community participation beyond tokenistic involvement towards genuine partnership and empowerment. This same conversation is assumed to have happened in the food systems space, but currently there is no comprehensive framework for community involvement in urban food governance in the same way it exists for the field of planning (Schiff, Levkoe and Wilkinson, 2022). Despite this, food systems work is often conceptualized using the lens of socio-ecological justice which acknowledges the need to address inequities within food system and recognizes the interconnectedness between social, economic, and environmental factors (Bassarab et al., 2019). However, a large part of addressing that need involves ensuring diverse participation so that the voices of all community members, especially those from marginalized groups, are heard and valued in decision-making processes. Representation that reflects the population being planned for is essential for the inclusion of diverse perspectives in policy formulation and implementation but does not always happen with urban food policy and governance (Koski et al., 2018).

Food Policy Councils

One emerging structure for ensuring this participation in food system governance and policy is the concept of a Food Policy Council. Food Policy Councils (FPCs) are typically community-based groups that are comprised of diverse stakeholders, usually including representatives from government agencies, non-profit organizations, businesses, and community members, who come together to address food system challenges at the local or regional level (Schiff, Levkoe and Wilkinson, 2022). There is no exact agreed upon structure so the composition and function of each council will greatly depend on their geography and the desires of the people creating the FPC. They can be housed in government or outside of it and be grassroots or top down depending on the council. One factor that is almost always present however is that these councils serve as platforms for fostering collaboration, dialogue, and action around food-related issues, ranging from food access and affordability to sustainability and food justice (Range et al., 2023). FPCs have engaged in activities such as conducting research, developing policy recommendations, and implementing programs to improve the food system's health, equity, and sustainability (Calancie et al., 2018). Although their composition varies depending on the region and context, they often strive to include representatives from diverse backgrounds to ensure inclusive decision-making and representation of all community voices. Typically, FPCs comprise diverse stakeholders, including community members, policymakers, food producers, and advocates, reflecting a cross-section of interests and expertise.

While FPCs are not entirely new, they represent a growing movement towards inclusive decision-making processes in food governance. These councils can offer various benefits, including fostering community engagement, promoting local food sovereignty, and amplifying marginalized voices in food policy discussions. They function as advisory bodies, providing recommendations and advocating for policies that support sustainable and equitable food systems. Drawing from recent research, which highlights the increasing role of Food Policy Councils (FPCs) in fostering inclusive governance structures (Schiller-Merkens and Machin, 2023), we recognize the potential of these councils to serve as platforms for promoting socio-ecological justice and enhancing diverse participation.

However, despite their promise, FPCs face challenges in ensuring genuine representation and meaningful participation. Issues such as limited funding, power imbalances, and tokenistic involvement hinder their effectiveness in truly reflecting community needs and priorities. Additionally, while FPCs have addressed a range of policy areas, including food access, nutrition, and environmental sustainability, their impact remains difficult to quantify due to a lack of comprehensive evaluation mechanisms. As highlighted in the 2009 Food Policy Councils: Lessons Learned report by the Institute for Food and Development Policy, there is a pressing need to assess the effectiveness of FPCs in achieving their objectives and their broader influence on the food system. Despite extensive research, the report authors were "…unable to quantitatively demonstrate the impact of Food Policy Councils on food access, food policy, public health, or economic development due to a lack of data or evaluation procedures within individual councils, despite numerous success stories" (Harper et al., 2009). The lack of evaluation frameworks, data, and evaluation procedures makes it almost impossible to evaluate the effectiveness of these councils, or their progress towards meeting stated goals including diverse participation and representation. The Food Policy Networks (FPN), a project of the Johns Hopkins Center for a Livable Future (CLF) based at the Bloomberg School of Public Health conducts an annual survey of food policy councils since 2013 which allows us to quantify some of these challenges. Despite having diversity, representation, and inclusion listed as key goals for a large portion of the surveyed Food Policy Councils, there were no frameworks, available data, or accountability measures in place to ensure that those goals are being achieved (Bassarab, Raychel Santo and Palmer, 2018). Indeed, even taking a secondary approach to quantifying community input in the FPC, the census data indicates that close to 10% of councils did not organize any community engagement activities, see [fig.1]. Those community engagement activities that were organized by FPCs according to the census scored on the lower end of Arnstein's ladder of

citizen participation see [fig.2] with the majority landing in the informing or consulting category (Arnstein, 1969).

[fig.1] Community Engagement Activities from the Food Policy Council Census Bassarab, Raychel Santo and Palmer, 2018
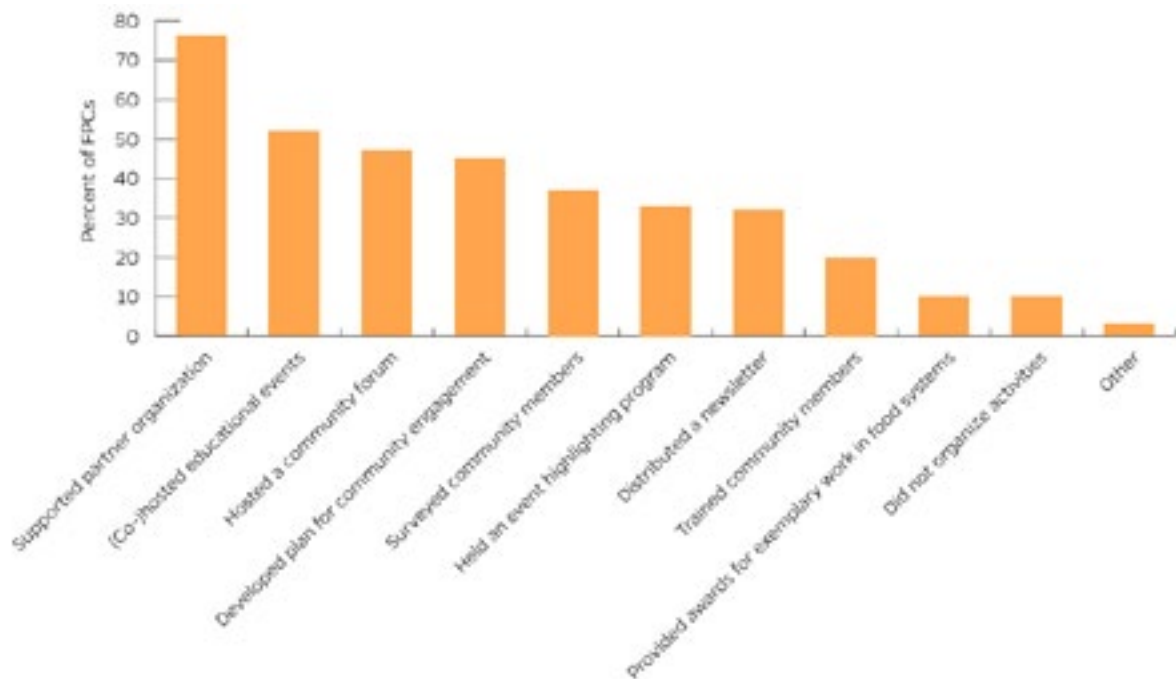
[fig.2] Arnstein's ladder of citizen participation, from Arnstein, 1969

As mentioned earlier in this paper, numerous challenges have also existed in fostering community voice and participation in the field of urban planning as well, but these shortcomings have also been a main focus of reform and study within the planning field in the past decade. The result being that there are numerous frameworks, research, and process guidance on creating inclusive and diverse participation and planners are now widely acknowledged for their role and expertise in community facilitation (Sharifi et al., 2023).

Actionable Insights

Bringing the two realms of planning and food systems governance together reveals actionable insights in equitable food system planning and involves recognizing the pivotal role that

planners can play in fostering inclusive and participatory processes. Despite their expertise in facilitating public input and citizen participation, planners are often underutilized in the creation of food plans and long-range policies. Leveraging their skills and knowledge can enhance the representation of diverse voices and perspectives, ensuring that food policies truly reflect the needs of the communities they serve.

Secondarily, it's essential to acknowledge that there is another benefit to the involvement of urban planners in urban food governance, and specifically in Food Policy Councils regarding their expertise in land use planning and policy. According to data from the 2021 annual food policy council census, 13% of Food Policy Councils included "Land Use Planning" in their top three policy priorities [fig.3] and yet many have no experience or expertise in this realm (Santo, 2021).

[fig.3] Land Use Planning Included in Top 3 FPC priorities, from Santo, 2021, elaborated by the author
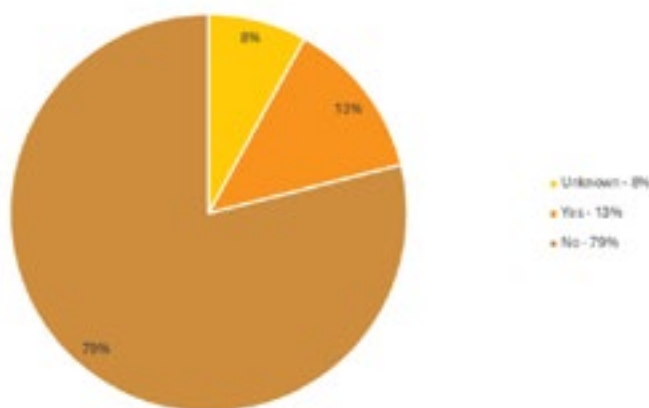
Several studies acknowledge the potential of food councils working in conjunction with local government as vehicles for land use policy development (Range et al., 2023), (Scherb et al., 2012), (Schiff, 2008), (Gupta et al., 2018), (Boden and Hoover, 2018) but many times FPCs lack the technical expertise or capacity to engage in this type of policy (Gupta et al., 2018). According to a 2012 survey of food policy councils in the United States "those not engaged in policy most often cited lack of resources and technical expertise as barriers" (Scherb et al., 2012). Land Use Planning Policy is clearly a knowledge domain that urban planners could step into and assist with, but perhaps due to the lack of historical connection between urban food governance or food systems in general and the field of urban planning, the connections still fail to be made. The composition of the majority of Food Policy Councils included in the 2012 survey did not include an urban or regional planner (Santo, 2021). Including urban planners in FPCs could allow the councils to both more comprehensively address community input and diverse participation in addition to accessing the technical expertise to tackle land use policies as part of their policy platforms.

In navigating the complexities of democratic governance amidst socio-environmental challenges, it's crucial to prioritize solutions that center on the needs and experiences of those most affected. This approach ensures that policies and strategies are responsive to the diverse socio-economic and environmental contexts in which they operate. FPCs currently aim to do this in their work but have not traditionally had the resources or frameworks available for ensuring the required diversity of participation and input. Developing strategies to enhance democratic governance in the face of the volatility, uncertainty, complexity, and ambiguity that are now normal in our world requires innovative approaches and adaptive methodologies including blending traditionally siloed professions and practices like urban planning.

Policy Framework at the Federal and State Scales

The conversation around land use policy would be incomplete without touching on the overarching policy framework at the federal and state scales as well as the local scale. A look into the two larger scales at the state and federal level reveals a significant influence of government policies on local food systems (Fink, Schluntz and Galperin, 2018). At the federal level, policies such as the Farm Bill play a crucial role in shaping agricultural practices, food production, and distribution systems. Additionally, state-level legislation and initiatives, often administered through state extension offices, further impact local food systems by influencing funding allocations, regulatory frameworks, and support programs. However, despite the potential for federal and state policies to address food system challenges, there remains a lack of consistent coordination and alignment across different levels of government leaving the local level out of the picture almost entirely (Fink, Schluntz and Galperin, 2018).

This fragmented approach to food policy can create obstacles to effective governance and hinder efforts to ensure meaningful participation from diverse stakeholders which is one of the main advantages of local level planning and engagement. While some federal and state initiatives may prioritize local engagement, they often lack an entity with which to engage since there is no standardized local effort across all federal or state jurisdictions that participates in food systems planning. While FPCs could step into this space since only two states in the U.S. lack a FPC, there would have to be greater accountability and standardization of FPCs. Regardless of the role of FPCs in this role, the lack of a coordinated entity to assist in food policy at the local level signals a need for that role as well as the need for greater integration and coherence across scales food policy development and implementation.

Highlighting these challenges underscores the importance of bridging the gap between federal, state, and local food policy efforts. By fostering collaboration and communication among planners, policymakers, practitioners, and community stakeholders, we can promote more holistic and coordinated approaches to addressing complex food system issues. Additionally, exploring opportunities for synergy and alignment between federal, state, and local policies can enhance the effectiveness of interventions and support the development of more resilient and sustainable food systems.

Looking to the Future

This study acknowledges the inherent limitations of focusing on a singular case area with the United States. However, this focused approach offers several advantages, including the opportunity for in-depth analysis and comprehensive insights into urban food governance in the United States due to the wealth of existing data there. By thoroughly examining the landscape of food planning and governance structures at the local level, this research sets the stage for future comparative studies that can expand our understanding of food systems across different contexts.

While rooted in the U.S. context, the findings of this study have broader implications that transcend borders. By shedding light on the challenges, opportunities, and dynamics of urban food governance, this research contributes to broader discussions on food system resilience and sustainability. Moreover, it lays the groundwork for comparative analyses encompassing peri-urban and rural landscapes, offering valuable insights into diverse food system contexts.

Moving forward, the insights generated from this study could inform policy and practice efforts aimed at guiding transformative changes toward more resilient and sustainable food systems. By addressing the complex socio-ecological challenges facing food systems, policymakers, planners, and practitioners can work collaboratively to develop innovative solutions that promote equity, diversity, and inclusivity. Through continued research and dialogue, we can advance our understanding of urban food governance and contribute to the collective pursuit of a more just, equitable, and sustainable food future.

Bibliography

Arnstein, S.R. (1969) 'A Ladder Of Citizen Participation', *Journal of the American Institute of Planners*, 35(4), pp. 216–224. Available at: https://doi.org/10.1080/01944366908977225.

Bassarab, K. *et al.* (2019) 'Finding Our Way to Food Democracy: Lessons from US Food Policy Council Governance', *Politics and Governance*, 7(4), pp. 32–47. Available at: https://doi.org/10.17645/pag.v7i4.2092.

Bassarab, K., Raychel Santo and Palmer, A. (2018) 'Food Policy Council Report 2018'. Available at: https://doi.org/10.13140/RG.2.2.29205.99046.

Berke, P. and Godschalk, D. (2009) 'Searching for the Good Plan: A Meta-Analysis of Plan Quality Studies', *Journal of Planning Literature*, 23(3), pp. 227–240. Available at: https://doi.org/10.1177/0885412208327014.

Boden, S. and Hoover, B. (2018) 'Food Policy Councils in the Mid-Atlantic: Working Toward Justice', *Journal of Agriculture, Food Systems, and Community Development*, pp. 1–14. Available at: https://doi.org/10.5304/jafscd.2018.081.002.

Calancie, L., Allen, N.E., *et al.* (2018) 'Evaluating Food Policy Councils Using Structural Equation Modeling', *American Journal of Community Psychology*, 61(1–2), pp. 251–264. Available at: https://doi.org/10.1002/ajcp.12207.

Calancie, L., Cooksey-Stowers, K., *et al.* (2018) 'Toward a Community Impact Assessment for Food Policy Councils: Identifying Potential Impact Domains', *Journal of Agriculture, Food Systems, and Community Development*, pp. 1–14. Available at: https://doi.org/10.5304/jafscd.2018.083.001.

Department of Planning and Development (2005) *Toward a Sustainable Seattle, 2005 Seattle Comprehensive Plan - A plan for Managing Growth 2015-2035*. City of Seattle.

Fink, B.A., Schluntz, A.O. and Galperin, J.U. (2018) 'Food Localization: Empowering Community Food Systemsthrough the Farm Bill', *Journal of Food Law and Policy*, 14(1).

Gupta, C. *et al.* (2018) 'Food Policy Councils and Local Governments: Creating Effective Collaboration for Food Systems Change', *Journal of Agriculture, Food Systems, and Community Development*, pp. 11–28. Available at: https://doi.org/10.5304/jafscd.2018.08B.006.

Harper, A. *et al.* (2009) *Food Policy Councils: Lessons Learned*. Institute for Food and Development Policy.

Koski, C. *et al.* (2018) 'Representation in Collaborative Governance: A Case Study of a Food Policy Council', *The American Review of Public Administration*, 48(4), pp. 359–373. Available at: https://doi.org/10.1177/0275074016678683.

Legislative and Policy Committee (2007) *APA Policy Guide on Community and Regional Food Planning*. Policy Guide. American Planning Association. Available at: https://www.planning.org/policy/guides/adopted/food.htm (Accessed: 10 August 2017).

Levy, J.M. (2017) *Contemporary urban planning*. Eleventh Edition. New York: Routledge, Taylor & Francis Group.

Prové, C., De Krom, M.P.M.M. and Dessein, J. (2019) 'Politics of scale in urban agriculture governance: A transatlantic comparison of food policy councils', *Journal of Rural Studies*, 68, pp. 171–181. Available at: https://doi.org/10.1016/j.jrurstud.2019.01.018.

Raja, S., Born, B.M. and Russell, J.K. (2008) *A planners guide to community and regional food planning: transforming food environments, facilitating healthy eating*. Chicago, Illinois: American Planning Association.

Range, C. *et al.* (2023) 'Measuring the Effectiveness of Food Policy Councils in Major Cities in the United States', *Foods*, 12(9), p. 1854. Available at: https://doi.org/10.3390/foods12091854.

Santo, R. (2021) '2021 Food Policy Council Networks Map'. John Hopkins Center for a Livable Future. Available at:

https://clf.maps.arcgis.com/apps/webappviewer/index.html?id=daaf010d6cc24089a0ca14e6cb235c40.

Scherb, A. *et al.* (2012) 'Exploring Food System Policy: A Survey of Food Policy Councils in the United States', *Journal of Agriculture, Food Systems, and Community Development*, pp. 3–14. Available at: https://doi.org/10.5304/jafscd.2012.024.007.

Schiff, R. (2008) 'The Role of Food Policy Councils in Developing Sustainable Food Systems', *Journal of Hunger & Environmental Nutrition*, 3(2–3), pp. 206–228. Available at: https://doi.org/10.1080/19320240802244017.

Schiff, R., Levkoe, C.Z. and Wilkinson, A. (2022) 'Food Policy Councils: A 20—Year Scoping Review (1999–2019)', *Frontiers in Sustainable Food Systems*, 6, p. 868995. Available at: https://doi.org/10.3389/fsufs.2022.868995.

Schiller-Merkens, S. and Machin, A. (2023) 'Knowing Food: Sustainability Politics, Food Policy Councils and the Co-Production of Knowledge', *International Journal of Politics, Culture, and Society*, 36(3), pp. 311–328. Available at: https://doi.org/10.1007/s10767-023-09446-1.

Sharifi, A. *et al.* (2023) 'Progress and prospects in planning: A bibliometric review of literature in Urban Studies and Regional and Urban Planning, 1956–2022', *Progress in Planning*, 173, p. 100740. Available at: https://doi.org/10.1016/j.progress.2023.100740.

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Food system transformation pathways on hold. Why can local food policies get stuck?

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Food system transformation pathways on hold. Why can local food policies get stuck?

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Local food policies are increasing worldwide and are presented as a fundamental part of the solutions to develop transition pathways for food systems' sustainable transition. They are lauded for and, to different degrees, have had the power to bring together and enhance sustainable food initiatives, act upon public food procurement's sustainability and food access, foster innovative forms of governance and participatory processes, among other things. However, these policies can also get stuck or simply never evolve from political declarations of intents, or assemblies of Civil Society Organizations, into concrete plans and actions. In this paper, we build on the case study of the intermunicipal food policy *Piana del Cibo* - which was created in 2019 in the province of Lucca (Italy) – to attempt to understand why it went through a period of inactivity despite its high potential and expectations around it. We make use of the literature on the (food) policy process, food system transformation and critical agrarian studies to highlight the reasons behind the slowdown of this policy as well as its progressive detachment from the palette of local actors that were involved in it in the first place. While we highlight the context-specificity of these challenges, we also reflect on issues and barriers that can be found in various if not all contexts, namely difficulties around labour, participatory processes, integration across different actors, bodies and domains, and the navigation of political changes.

Keywords: local food policies; food systems; sustainability transition; policy process.

Introduction

The concept of food system has entered the global policy discourse, as exemplified by the 2021 and 2023 UN Food Systems Summits and the EU Farm-to-Fork Strategy. This agenda is based on at least two decades of interdisciplinary research on the matter, which widely discussed the need to address food sustainability overcoming a "single-issue approach" (Sonnino, 2023). While most scholars and policy makers acknowledge that it is necessary to think and act systemically, current agriculture and food challenges are becoming increasingly evident and complex. The recent farmers' protests in Europe represent an example in this sense, showing the tensions and contradictions that a top-down approach to sustainability transition – co-existing with the global corporate food regime (McMichael, 2005) – can engender. The concurrence of the growing attention to the 'food system' on one hand, with such challenges on the other, speaks about the need to put this notion into transformative practice. This entails shedding light on the incompatibilities between current neoliberal globalisation and socio-environmental sustainability in agri-food policies, and how this might manifest in transition processes. Food policies and food policy councils at local scale have been increasingly recognized as pioneering laboratories to put food system approach into practice (Mattioni et al., 2022; Sonnino, 2023). Firstly, by systematizing and supporting local food initiatives. Examples in this sense are current efforts to develop public food procurement at local level, systematize urban-rural relationships, and address locally food access and equity issues. Secondly, local food policies often come with experimenting innovative forms of democratic governance, which aims to overcome an exclusionary top-down approach to policy intervention (Bornemann and Weiland, 2019). Analysing local food policies – and their different phases – allows to understand the barriers to their development and to their systemic and participatory dimensions. In this paper, we explore more specifically why a local food policy can get stuck or simply never evolve from political declarations of intents, or assemblies of Civil Society Organizations, into concrete plans and actions. We discuss the case study of the first and till this day only Italian intermunicipal food policy *Piana del Cibo*, which was created in 2019 in the province of Lucca (Italy). We build on in depth interviews and more than two years of qualitative research on this case, including mapping activities, desk research and

Living Lab activities as part of the FoodCLIC EU project[1]. In the next section, we introduce the different bodies of literature that our analysis aims at bringing together, namely literature on policy process, neoliberal welfare and food systems transition. Then, we present the case study and expand on some of the challenges of this food policy, focusing on the themes of labour, the involvement of NGOs, participation and policy integration.

Local food policy as a process

Literature on public policies highlights the importance of looking at policy as a process. Among others, Sutton (1999) called to understand policy and policy implementation beyond the linear model, but rather as a "chaos of purposes and accidents". To make sense of it, Sutton argues, we need to adopt a multidisciplinary lens and closely observe from policy narratives to management and street level implementation. As part of this set of research, some have focused on the notion of policy cycle and its critiques (Jann and Wegrich, 2007). While moving away from its more static and single institution understanding, this literature can be useful to highlight how interactions between different actors shape policy in a cyclical manner, via continuous feedbacks and side-effects. These aspects are relevant for our analysis particularly in relation to the nature and role of periods of stasis and crisis. Exploring policy as a process also necessitates considering recent literature on public policies, which shows how these are evolving from state-led programs to public-private partnerships and third sector interventions. Such transformations arise from a growing neoliberal understanding of the public sphere, as well as the redefinition of the state and welfare in the context of austerity (e.g. Moini, 2015; Lever et al., 2019). We will draw on this body of literature to better analyse how certain forms of civic engagement – and volunteer labour – can be both at the basis of the start and the crisis of a local food policy. While context certainly plays a role in how these mechanisms unfold, we can observe continuities linked to the ways in which the neoliberal international regime redefines governance, also at local level. These transformations are also object of study in the field of policy analysis. Finally, in recent years, research on policy process and (local) food systems emerged, pointing out to the need to transition towards a new policy regime and tools for sustainable food policies (Brunori, 2023). While these authors looked at multiple policy scales, they also call for analysis at local level (or sub-system level), interrogating – from a policy process perspective – the role of local actors, obstacles to transformation and the risk for crisis. Research on local food policies and food policy councils analysed more in-depth their opportunities and challenges linked, among other things, to participation, inclusiveness and democratic processes (e.g., Coulson and Sonnino, 2019). Particularly relevant to our analysis is research on the intersections between food movements and food governance (Manganelli, 2022). Literature on the lack of development of food policy processes in Italy also exists, as in the case of the attempt to establish a Food Plan of the province of Pisa (Italy) in 2011 which never evolved from its embryonic stage (Cretella, 2019).

The *Piana del Cibo* food policy

This paper describes the case of the intermunicipal food policy *Piana del Cibo*, established in Tuscany (Italy) as of 2018, since the subscription of the Milan Urban Food Policy Pact by the cities of Capannori and Lucca. An articulated process followed, which entailed the involvement of three neighbouring (and smaller) municipalities[2] and a participatory project for engaging a diversity of actors in building a shared vision and strategy. This eventually led in 2019 to the Food Strategy – a document including the guiding principles and aims of the initiative – and official launch of the food policy[3]. The governance of the *Piana del Cibo* has been functioning as a combination of two main elements: on one hand, the relationship of intermunicipal

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cooperation among the five City Boards was formalized as a Joint Management (*gestione associata*) of functions. On the other, an elaborate participatory governance was designed, with the purpose of "striking a balance between civil society's engagement and decision making on food" (Arcuri et al., 2022, 292). Its functioning, encompassing a set of entities with different membership and functions, was defined in the Food Policy Bylaw, and, as per 2024, it is currently being revised and adjusted after the first phase of experimentation (Rovai, 2023). In the last few years, the case has attracted the attention of multiple authors (Rovai, 2023; Arcuri et al., 2022; Sibbing et al., 2022) who have addressed its complex governance model, the process towards food policy integration, and some of the high and lows of the experiment. For instance, Arcuri et al. (2022) observed how a strong political backing at the onset of the initiative pushed towards the most binding form of intermunicipal cooperation, with a view to protecting the initiative from the risk of electoral changes (Halliday and Barling, 2018), and to ensuring equal representation and food policy responsibilities to all the five cities. However, looking back with hindsight, Rovai (2023) points out the insufficiency, in practice, of this instrument, in the absence of the right to food recognition in the municipal charter. One crucial enabler was the presence of a Food Policy Office set in Capannori, with dedicated staff working in between administrative and political roles. They oversaw coordination and support to the whole governance structure, fulfilled communication and fundraising tasks, and were essential to keep the attention on the food policy (Arcuri et al., 2022). It is noteworthy that this Office was temporary suspended but since 2023 the theme of the food policy has been reintegrated in the Territorial Development Office. Some actors have been keeping the food policy discourse alive even in times of slowdown of the activities, such as research representatives – who involved the city of Capannori in FoodCLIC – and Slow Food. More generally, members of the local Slow Food Convivium were particularly central to the discourse and main contents of this food policy. It was streamlined along themes such as the right to food as "good clean and fair food for all"[4], local quality food production (circuits), food education and local sourcing of school canteens[5].

Challenges around labour and participation: the role of NGOs

As described, the activities of the *Piana del Cibo* were centred around a participatory governance system. Organs like the 'food agora' and the thematic working groups were particularly important to touch base with what was already happening on the ground, and directly involve a variety of local inhabitants and food movements. From the very beginning the participants included several local NGOs – such as the Catholic relief, development and social service organizations *Caritas*, and the gardening association *Giardini del Futuro* – as well as networks of small food entrepreneurs such as the social agriculture cooperative *La Calafata* and the *Lucca Biodinamica* producers' group. The context of the Piana di Lucca is rich in (food-related) NGOs and grassroot movements, as exemplified in the reports on local solidarity and civic economy (Distretto di Economia Civile della Provincia di Lucca, 2022). Since a few decades, the area is also characterised by the presence of food movements, particularly in relation to quality food, as well as alternative farming and procurement models such as Solidarity Purchase Groups (Brunori, Rossi and Malandrin, 2011). While these can be seen as the expression of a fervent civil society – and represented a vital ground for the development of the food policy –, it is important to underline that their role often goes beyond their initial scope and dimension. As also underlined in other contexts, it is not rare that NGOs are called into action to fill in the gap left by welfare state retrenchment in a range of activities varying from the management of urban gardens to food aid (e.g., Vasile, 2023). In relation to the *Piana del Cibo*, Caritas coordinators for food aid highlighted that it had been characterised by an initial period of collaborations and experimentations between 2018 and 2019. An example in

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[4] Slow Food website. https://www.slowfood.com
[5] The intervention of Slow Food representatives (both at global and local level) is characterized by a discourse around taste (Siniscalchi, 2019), which can positively influence food consumption habits but has also been criticized in relation to its possible exclusionary features, niche-marketed foods and commodification of traditions and identities (Leitch 2003).

this sense is the project *Conserve*, which connected small-scale farmers, local cooperatives and food aid organizations in the development of local canned products. However, more recently, the food policy was facing a period of stasis due to "a lack of political investment". Without the support of the public administrations as well as dedicated resources, Caritas – as well as other NGOs – had limited availability to develop new projects for the *Piana del Cibo*, while being often overburdened at internal level. This was also pointed out in relation to the theme of volunteer labour by a series of organizations that are part of the food policy network, such as the urban gardens *Fattoria degli Albogatti* and *Giardini del Futuro*. These urban gardens relied entirely on the work of volunteers and their representatives asked themselves if continuity could be guaranteed and if the interest of their municipality would ever translate into a specific attention to their regards. While volunteer labour is to be problematized as a systematic approach to welfare provision in Italy (e.g., Muehlebach, 2012), the case of the *Piana del Cibo* shows the risks related to high reliance on this approach also in the field of local food policies. It is important to highlight that these aspects also have impacts on participatory processes. The slowdown of this policy greatly depended on its progressive detachment from the palette of local actors that were involved in it in the first place. According to the representative of a farmers' Union, so far, the *Piana del Cibo* never included an economic plan and an added value that could motivate people to join forces and go beyond their ongoing activities.

Challenges to integration and political change

One major goal of the *Piana del Cibo* was fostering integration, in the sense of overcoming siloed approach at municipal level, across municipalities, between interventions in different policy domains, and in terms of coherence and coordination between actors, bodies and initiatives insisting on the same domain (Candel and Biersbroek, 2016). Despite the Joint management governance model, the integration across the municipalities still represents one of the main challenges of the *Piana del Cibo*. An emblematic example in this sense was the participation to the regional call for funding regarding urban agriculture in 2020. As reported in an interview with a researcher involved in the first stages of the *Piana*, while being engaged in the food policy process, each municipality participated to the call on its own, without even attempting at coordinating. Factors that have led to such integration challenges include, among others, issues connected to municipal differences in stages of implementations of policies, single municipalities' engagement in the project, its governance, and changes in their political agenda. An example of the first issue is the different expiry dates of the contracts regarding tenders for school canteens, which made impossible to adopt a common strategy for Public Food Procurement, as reported by one member of the public administration of Capannori. Moreover, the five municipalities always had different roles in the whole policy process, which impacted on their capacity to contribute to it – and the participatory governance bodies. Capannori had a leading role in the development of the *Piana del Cibo*, it hosted the Food Policy Office and some of the more active stakeholders in that area assumed leading roles in the policy's participatory bodies. The municipalities involved also have different sizes, and consequently energies and resources. For example, the municipality of Villa Basilica faced significant difficulties in participating to the implementation of the policy. This was mainly due to its very small size, especially when compared with the dimensions of the other municipalities, which limited its capacity to make its way in such an ambitious project. A big step backwards was also the decision of the municipality of Lucca to withdraw from the food policy – as formalized in October 2023. Finally, integration challenges emerged also within each municipality. The food education program in Capannori's public schools represents a significant example in this sense. This was the policy domain in which activities and actors have been more successfully connected, as proved by the educational gardens project *Orti in Condotta* – which started in 2013, based on the collaboration between Slow Food, local

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schools and NGOs, and the municipality[6]. In this case, integration challenges included problems in scaling out good practices from the few "pioneering" schools to a wider range of schools in Capannori. One of the main obstacles regarded teachers' involvement, because of the lack of awareness or competencies in food education, but also of the lack of energies, time, and space in the school canteens to transform the lunch breaks into educational moments. In addition, despite the implementation of multiple food education projects, a systematic approach is still generally absent. Among other things, there is no archive of the educational toolkits developed over the years. Another limitation is the lack of continuity of such projects from primary to secondary school since school canteen service is provided only in kindergartens and primary school.

Conclusion

By looking at local food policy processes from a multidisciplinary angle, we have highlighted some of the challenges that characterize the development of the *Piana del Cibo* food policy. While our analysis is context-specific, it speaks of barriers to the development of local food policies which are and need to be problematized more widely. We have focused on issues around high reliance on voluntary labour and the roles of NGOs, which are key to the emerging of contemporary local food policies, while also representing the reason at the basis of multiple crises. As in other fields – such as social service provision (Moino, 2015) –, this dimension calls for transition pathways based on alternatives to neoliberal approach to service provision. We also discussed challenges to integration at multiple levels, for which we need an increased monitoring of food policies' experimentations. This could provide more solid basis for the continuation of integrated food policy processes, as well as support refocusing the agenda of action-oriented spaces for participation. In the case of the *Piana del Cibo*, the recent work carried out in the project FoodCLIC has been supporting an attentive monitoring of the evolution of the policy and the partial re-launch of the activities – thanks to new financial and human resources. In the last year, a Living Lab has been established, encompassing members from the municipality of Capannori, the University of Pisa and historical representatives of the *Piana*. The activities carried out – including mapping, workshops, along with internal coordination meetings – have led so far to the renewal of the Joint management convention (early 2024), confirming the official commitment towards the Intermunicipal Food Policy among the four remaining municipalities, and the resizing of shared strategic goals towards more tangible and medium-term objectives. The latter resulted from simplifying the previous configuration of thematic working tables around three main lines of action, with respective working groups, namely: 'food education', 'local food production and supply chains', and 'food poverty and access to food'. Beyond FoodCLIC, another important development regarded the school canteens' management system in the municipality of Capannori, which is transitioning towards a local public procurement model, thanks to the support of the school meals public company *Qualità e Servizi*. This transition provided an opportunity for the municipality to reconvene local actors (ranging from parents to farmers) around the preparation of a fertile ground for this local public procurement model, while serving as an example for neighbouring municipalities. While this food policy enters a new phase, it is key to keep the attention on the building blocks that can be added to mitigate crises and work towards more resilient, autonomous and transformative local food policy models.

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[6] *Orti in Condotta* Lucca and Capannori Facebook Page. https://www.facebook.com/OrtincondottaLuccaeCapannori/

Bibliography

Arcuri, S., Minotti, B., and Galli, F. (2022) 'Food policy integration in small cities: The case of intermunicipalgovernance in Lucca, Italy', *Journal of Rural Studies*, 89, pp. 287-297.

Bornemann, B., and Weiland, S. (2019) 'Empowering people–democratising the food system? Exploring the democratic potential of food-related empowerment forms', *Polit. Govern*, 7, pp. 105–118.

Brunori, G (2023) 'Towards a new generation of (agri-) food policies', *Bio-based and Applied Economics*, 12 (2), pp. 103-113.

Brunori, G., Rossi, A., and Malandrin, V. (2011) 'Co-producing Transition:Innovation Processes in Farms Adhering to Solidarity-based Purchase Groups (GAS) in Tuscany, Italy', *The International Journal of Sociology of Agriculture and Food*, 18 (1), pp. 28–53.

Candel, J. J., and Biesbroek, R. (2016) 'Toward a processual understanding of policy integration', *Policy Sciences*, 49, pp. 211-231.

Coulson, H., and Sonnino, R. (2019) 'Re-scaling the politics of food: Place-based urban food governance in the UK', *Geoforum*, 98, pp. 170-179.

Cretella, A. 2019. 'Alternative food and the urban institutional agenda: Challenges and insights from Pisa', *Journal of Rural Studies*, 69, pp.117-129.

Distretto di Economia Civile della Provincia di Lucca (2022) *Sguardi avanti. Secondo rapporto sull'economia civile in provincia di Lucca.* Lucca: BdC editore.

Halliday, J., and Barling, D. (2018) 'The role and engagement of mayors in local food policy groups: comparing the cases of London and Bristol', *Advances in Food Security and Sustainability*, 3, pp. 177–209.

Jann, W., and Wegrich, K. (2007) 'Theories of the policy cycle' in Jann, W. and Wegrich, K. (eds) *Handbook of public policy analysis*. Routledge, pp. 69-88.

Lever, J., Sonnino, R., and Cheetham, F. (2019) 'Reconfiguring local food governance in an age of austerity: towards a place-based approach?' *Journal of Rural Studies*, 69, pp. 97-105.

Manganelli, A. (2022) *The hybrid governance of urban food movements: learning from Toronto and Brussels*. Springer Nature.

Mattioni, D., Milbourne, P., & Sonnino, R. (2022) 'Destabilizing the food regime "from within": Tools and strategies used by urban food policy actors'. *Environmental Innovation and Societal Transitions*, 44, pp. 48-59.

McMichael, P. (2005) 'Global development and the corporate food regime' in Buttel, F.H. and McMichael, P. (eds) *New directions in the sociology of global development*. Amsterdam: Elsevier, pp. 265–299.

Moini, G. (2015) *Neoliberismi e azione pubblica. Il caso italiano*. Roma: Ediesse.

Muehlebach, A. (2012) *The moral neoliberal: welfare and citizenship in Italy*. Chicago: University of Chicago Press.

Rovai, M. (2023) 'La Piana del Cibo di Lucca: una local food policy in fase di stallo', *Re|Cibo Rivista della Rete Italiana Politiche Locali del Cibo*, 2 (1), pp. 82.99.

Sibbing, L. V., Duncan, J., Arcuri, S., Galli, F., & Bock, B. B. (2022) 'Assessing what food policies lead to on the ground: exploring opportunities and challenges of the MUFPP indicator framework', *Agroecology and Sustainable Food Systems*, 46(9), pp. 1414-1439.

Sonnino, R. (2023) 'Food system transformation: Urban perspectives', *Cities*, 134, pp. 104-164.

Sutton, R. (1999). *The policy process: an overview*. London: Overseas Development Institute.

Vasile, M. (2023). *The silenced paradoxes of urban renewal: morality, welfare reconfiguration and precarious labour in Collective Food Procurement in Turin*. Doctoral Thesis. Leiden University.

The Thematic Partnership on Food from Urban Agenda for the EU: Catalyzing Local Food System Transformation

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The Thematic Partnership on Food from Urban Agenda for the EU: Catalyzing Local Food System Transformation

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This paper examines the role of the Thematic Partnership on Food within the EU's Urban Agenda. More particularly, the focus is on its impact in narrowing the divide between overarching EU policies and grassroots innovations in food systems. It calls for a significant shift in perspective to acknowledge and bolster the variety of local food systems, along with their potential to foster equitable and sustainable practices through relocalisation and re-territorialisation. The need for a strong, multi-level governance framework within the EU is stressed, with a focus on how the Thematic Partnership on Food can aid cities in formulating thorough food policies. From January 2024, the partnership encompasses a diverse range of 19 partners, including cities, metropolitan regions, academic bodies, and other stakeholders, jointly coordinated by the City of Milan and the Lisbon Metropolitan Area.

The initiative aims to tackle gaps in knowledge, policy, and funding at the EU level, striving for policy consistency and enabling cities to be pivotal in driving transformative changes in food systems. It highlights the crucial role of local authorities and of the city-region dimension in developing cohesive local policies that span the rural-urban divide and concentrate on bioregional dynamics. The partnership is set to offer a framework for sustainable, resilient, and fair food systems throughout Europe, aligning local breakthroughs with broader EU aims. This includes participation from cities such as Mouans-Sartoux, Vitoria-Gasteiz, and Ghent, which are recognised for their progressive local food policies.

Keywords: Thematic Partnership on Food, Urban Agenda for the EU, Multi-level Governance, Food System Transformation, Integrated local food policies

Introduction

The European food system's reliance on global networks and corporate agri-food business players presents a significant vulnerability that current policies inadequately address. The absence of overarching legislation on food systems, as highlighted in the IPES report "Toward a Common Food Policy" published in 2019, underscores this gap. Although the need for a systemic approach to food at the EU level is recognized, its implementation remains limited.

The Thematic Partnership on Food for the Urban Agenda for the EU (UAEU) has as main focus to bridge these gaps by emphasizing the critical role of cities in fostering resilient and just local food systems. Cities, with their dense populations, abundant resources, and centralized decision-making capabilities, are strategic in food systems transformation through the development of local policies and collaborative structures such as Food Councils. This partnership aims to support multi-level governance coherence, integrated food policies, and participatory processes at all governance level for just and resilient sustainable food systems.

This article is based on the critical interpretation by the authors of the ex-ante assessment (EAA) on the Food Tematic Area conducted in 2023 for the Urban Agenda for the EU (UAEU).

The UAEU and its Thematic Partnership on Food prepared following the EAA aimed to address the critical challenges in food systems identified through this preparatory work:

- Fragmented Policy Framework: The existing legislative frameworks, such as the CAP, CFP, and general food laws, have been developed in isolation. This fragmentation fails to address the food system's complexity holistically, leading to policy incoherence and inefficiencies.

[fig.1]: Food legislation evolution. Source: elaborated by the authors.

- Inadequate Inclusion of Externalities: Current market prices for food do not reflect the true environmental and social costs of production. Externalities like environmental degradation, greenhouse gas emissions, and public health impacts are not accounted for, resulting in market distortions and unsustainable practices.

- Food Justice and Access to Land: Food justice issues, including equitable access to nutritious food, remain inadequately addressed. Additionally, access to land for sustainable food production is a significant challenge, particularly for young and small-scale farmers.

- Dependence on Global Supply Chains: The EU food system's reliance on global supply chains makes it vulnerable to disruptions, such as pandemics, natural disasters, and political conflicts, which can lead to food shortages and price volatility.

- Insufficient Multi-Level Governance: There is a lack of coherence between EU, national, and local policies, hindering the effective implementation of sustainable food strategies. This gap results in a misalignment of goals and reduced effectiveness of initiatives aimed at food system resilience.

- Funding gaps: despite the fact that most member states included the agro-food system as strategic innovation sector for smart specialisation at national and regional levels, this sector is not funded in the frame of the cohesion policy

- The city-region framework is not recognised as relevant at EC level even if it addresses the interconnected challenges of food resilience by stressing the role of cities, rural-urban interdependencies, and the need for cross-sector collaboration, and therefore gaps such as fragmented policies, CAP subsidies favoring large operators, inadequate education models, restrictive circularity regulations, stringent food safety standards, and disadvantageous fishing regulations pose significant challenges for food system transformation.

Urban Agenda for the EU: Enhancing the Role of Food in Sustainable Territorial Development and Cohesion Policies

The Urban Agenda for the EU (UAEU) represents an innovative multi-level governance approach aimed at enhancing urban policy and practice through collaborative efforts among Member States, cities, the European Commission, and other stakeholders. Launched in May 2016 with the Pact of Amsterdam and reaffirmed in November 2021 with the Ljubljana Agreement, the UAEU operates under the management of the European Urban Initiative (EUI) as part of the Directorate-General for Regional and Urban Policy (DG REGIO). The UAEU's core objectives include realizing the full potential of urban areas, fostering integrated approaches, and involving urban authorities in policy design.

The Thematic Partnerships in the Urban Agenda for the EU

Launched incrementally since 2016, the Thematic Partnerships are the cornerstone of the Urban Agenda for the EU (UAEU), addressing urban challenges through collaborative efforts between cities, Member States, the European Commission, and other stakeholders. As of October 2023, there were 18 active Thematic Partnerships focusing on various urban issues such as housing, mobility, and food systems.

Their aim is to develop and implement Action Plans to improve urban policy across three pillars: better regulation, better funding, and better knowledge. These Action Plans are crafted with input from public consultations and are essential for addressing specific urban challenges and fostering innovative solutions.

The partnerships also perform ongoing monitoring and evaluation of their actions, ensuring transparency and coherence in their initiatives. The EUI supports these efforts through regulatory, and knowledge-sharing frameworks, aligning urban policies with broader EU goals for sustainable development and cohesion.

The Food Thematic Focus

The transformation of food systems requires a systemic approach, and the Thematic Partnership emphasises the role of cities in leading this transformation. Considering the current momentum and the need for comprehensive legislation to ensure food system resilience, the partnership was planned in alignment with ongoing trends and initiatives. It responds to the urgent need to bridge gaps between EU-level policies and local innovations, focusing on food security, sustainability, and integrating rural-urban dynamics to create resilient and cohesive food systems.

The partnership recognises the importance of flexibility and a systemic focus, enabling it to adapt and align with ongoing processes. The UAEU Partnership on Food operates based on core values that guide its monitoring activities. These values include maintaining a food system perspective, supporting multilevel governance, considering the real price of food (including externalities), and recognising food as a human right and a common good. To promote sustainable and equitable food systems, the partnership should address key themes such as agroecology, food justice, access to land, and public land management. It affirms the importance of localising food systems, incorporating the external costs of food production into prices, and encouraging public procurement of local and organic foods. By advocating for policy alignment and resource pooling, the partnership has the potential to drive systemic transformation within the European Union and contribute to broader objectives, such as the European Green Deal and the United Nations Sustainable Development Goals.

The Ex-Ante Assessment (EAA) on the Food Thematic Area

The Partnership was prepared through an Ex-Ante Assessment (EAA) on the Food Thematic Area, initiated in January 2023 to identify gaps, challenges, and needs that it could address. The limited adoption of a systemic food approach at the EU level, the vulnerability of food systems dependent on global networks, and the insufficient focus on the role of cities in supporting resilient local food systems distinguished as key issues.

To address them, the Food Partnership needs to advocate for multi-level governance to manage the complexity of the food systems resilience issues, encouraging collaboration and coherent policymaking across various sectors. The partnership should align with policies like the Farm to Fork Strategy and the European Green Deal. By focusing on innovative funding, city-region frameworks, capacity building, and EU/national regulation, the partnership ambition is to drive systemic change within the EU's food systems.

Methodology

The EAA for the Food Thematic Area (TA) involved comprehensive desk research, extensive interviews, and active participation in relevant events. This work aimed to gather and synthesize information necessary for the effective framing, orientation and establishment of the UAEU Food Partnership. The publications, initiatives, and case studies relevant to the Food TA were categorized based on geographic coverage, relevance, origin, and date of issue. Key documents at the European scale were selected for detailed analysis, highlighting main policy trends, identifying gaps, challenges, and needs, and showcasing best practices that could inspire sustainable food system transformations. This foundational research informed the creation of guiding questions for the interviews and the identification of stakeholders to engage beyond the initial scope of the assignment. A series of interviews were conducted with representatives from European Commission Directorates-General (DGs) and other key organizations in the food sustainability area, such as IPES-Food, ICLEI, and Eurocities. These discussions supported the desk research findings and provided deeper insights into the thematic area. Organizations like ICLEI and Eurocities were considered relevant for their significant research and action in the Food TA, and their role in representing city interests—a critical focus of the UAEU. Throughout the assessment, interactions with the French National Network of Territorial Food Strategies, the Cities Network for Agroecology, and representatives from Dutch City Deals provided complementary insights and practical examples.

The EAA focused on identifying practical solutions for multi-level governance, policy alignment, regulatory support, and funding mechanisms. It emphasized the need for a flexible yet cohesive framework to ensure the effectiveness and sustainability of the Food Partnership. This included considering ongoing EU policy initiatives, such as the Farm to Fork Strategy and the upcoming EU Food Policy Council, which are pivotal in driving systemic change within the food systems.

Strategic Directions and Priorities

To address these gaps, the following strategic directions and priorities were identified:

- Develop an Overarching Policy Framework on food so necessary and unreasonably delayed that integrates various aspects of food systems into a comprehensive policy framework that ensures coherence and alignment across different policy areas to guide the transition towards more resilient food systems.

- Internalize Externalities in Food Pricing: Implement policies that internalize externalities, making sustainable practices more economically viable.

- Promote Food Justice and Improve Access to Land: Integrate food justice into EU policies, ensuring all populations have access to nutritious food and strengthen rural-urban linkages to enhance food system resilience and equity.

- Reduce Dependence on Global Supply Chains: Promote decentralized and diversified local food systems that reduce reliance on global supply chains.

- Enhance Multi-Level Governance: Strengthen coordination and coherence between EU, national, and local policies through multi-level governance frameworks. Encourage the establishment of local food policy councils and city-region food systems that facilitate integrated and participatory approaches to food system transformation.

- Support the provision of effective dedicated funding, for eg the creation of innovation funds for local food systems by cities collaborating with banks (interested in green financing) and NGOs

Realisation of the Food Thematic Partnership

The UAEU Partnership on Food aimed to gather relevant stakeholders from all parts of the food chain to build a shared vision and provide the necessary means for sustainable implementation. We evaluated applications focusing on motivation, expertise, stakeholder engagement, and resource commitment, to select a diverse, balanced, and committed partnership capable of addressing complex food system challenges.

Two applications stood out from Milan and the Lisbon Metropolitan Area, leading to a recommended joint coordination model leveraging the strengths of both entities. We included experienced and motivated cities of various sizes like Mouans-Sartoux, Vitoria-Gasteiz, Ghent, and Lille, to ensure a comprehensive approach to food policy across Europe.

In December 2023, the Food Thematic Partnership was formally established, marking a significant milestone in addressing urban food system challenges. Led by the City of Milan's Food Policy Department and the Lisbon Metropolitan Area, the partnership is strategically positioned to influence food policies and practices at the local and EU levels. The partnership's mission is to catalyze local food system transformations by leveraging the collective expertise and resources of its members. It focuses on promoting multi-level governance, fostering collaboration among stakeholders, and aligning local initiatives with broader EU objectives. Key activities include developing action plans, sharing best practices, advocating for policy changes that support sustainable food systems, and helping the provision of effective funding.

Selected members of the Partnership

Category	Participants
National authorities	*Food Systems Directorate, Ministry of Agriculture of Malta, French National Council for Food Resilience (CNRA)*
Cities (Urban Authorities)	*Municipality of Milan, Lisbon Metropolitan Area, Environmental Studies Centre, Vitoria-Gasteiz City Council, Municipality of Mouans-Sartoux, City of Ghent, City of Zory, Urban Municipality of Kranj, City of Vantaa, Dublin City Council, Municipality of Kristiansand*
European/national city umbrella organisations	*Eurocities, ICLEI European Secretariat*
Other stakeholders	*Ellinogermaniki Agogi, University of Barcelona, AESOP Sustainable Food Planning, Brasov Metropolitan Agency, Metropolitan Area of Lille, Metropolitan Area of Cagliari, Alytus District Municipality (active until April 2024)*
European institutions	*European Commission Directorate-General for Regional and Urban Policy (DG REGIO), European Commission Directorate-General for Health and Food Safety (DG SANTE), European Commission Directorate-General for Maritime Affairs and Fisheries (DG MARE), European Commission Directorate-General for Agriculture and Rural Development (DG AGRI), European Commission DG Directorate-General for Research and Innovation (DG RTD), European Commission Joint Research Centre (JRC)*

Table 1: categories of selected members of TPF. Source: elaborated by authors

The rationale for selecting participants in the Food Partnership within the UAEU was to ensure diversity and active engagement from cities with varying sizes and food policy experience. With large urban coordinators, we included smaller cities to balance advanced food policy cities with those eager to learn. We sought geographical diversity, including two participants from outside the EU.

Cities like Mouans-Sartoux, Vitoria-Gasteiz, Ghent, and Lille were selected for their experience in governance, public procurement, healthy consumption, land management, and food justice, promoting a comprehensive approach to food-related challenges. This diversity ensures cross-regional learning and a holistic food policy approach at the EU level. Four metropolitan areas, including Cagliari, represent unique urban dynamics, with a strong presence of small municipalities enhancing local perspectives.

The coordination combines Milan's progressive food policy leadership with Lisbon's ambition and resources. The Milan Urban Food Policy Pact (MUFPP) highlights Milan's role in comprehensive food strategies. This collaboration aims to advance governance, procurement, healthy consumption, land management, and food justice, reflecting Milan's multistakeholder, multilevel partnership commitment.

Malta's involvement brings insights from island and small country contexts. The participation of Aesop Sustainable Food Planning (SFP) and CNRA enhances the partnership's diversity and strengthens food system resilience through their combined expertise and stakeholder engagement. The inclusion of Ellinogermaniki Agogi and the University of Barcelona's Food Action and Research Observatory (FARO) will support academic methodology and innovation for a transformative approach. This diverse stakeholder engagement ensures a well-rounded, inclusive approach, integrating multiple perspectives into the food policy framework.

Post-Conclusion: Critical Perspective

Following the conclusion of the EAA and the establishment of the partnership in January 2024, the critical perspective centers on the partnership's role in navigating a complex and often contradictory political and economic landscape. The initial optimism surrounding the EU Sustainable Food Systems Framework was tempered by its removal from the European Commission's agenda and the EU Food Policy Council not being yet installed. In this context, the partnership's role becomes more crucial. Cities, though lacking extensive legislative and financial power, are pivotal in implementing food system changes. The partnership's strategic mission is supported by its composition, including ten cities, out of a total of 21 members, led by the city of Milan and the Lisbon Metropolitan Area. The partnership's ability to influence change is reinforced by its diverse membership, and geographical equitable distribution that bring varied perspectives and experiences, ensuring a holistic approach to addressing food system challenges across different scales and contexts.

Municipalities have relevant resources to implement innovative solutions and policies that promote equity, and resilience, even if they also face limitations due to the lack of legislative and regulatory power traditionally in dealing with rural and productive areas. The partnership addresses this gap by fostering collaboration between urban and regional authorities, enhancing the synergy between urban and rural areas, and advocating for integrated food policies at different governance levels. The participation of smaller municipalities alongside larger like Milan and Lisbon ensures a balanced approach. This diversity is important for developing comprehensive and effective food policies that can be adapted to different contexts across Europe. The involvement of cities with relevant experience in food policy, such as Mouans-Sartoux, Vitoria-Gasteiz, and Ghent, provides valuable insights and best practices that can be shared and implemented by other cities within the partnership, for building local food system resilience that should be addressed at EU level.

The proposed focus on themes like city-region framework, integrated food policies, hidden costs of food, agroecology principles, food justice, access to land, and public procurement aligns with the European Green Deal and the UN Sustainable Development Goals, and could generate driving systemic change within the EU's food systems, and promoting sustainability and resilience at multiple levels. The UAEU Partnership on Food could served as a critical platform for addressing the complex challenges faced by Europe's food systems.

Since its launch in January 2024, the UAEU Food Partnership has conducted several key activities, including narrowing its thematic scope to focus on innovative funding, city-region frameworks, capacity building, and EU/national regulation, and prioritizing urgent topics for the Urban Agenda for the EU during its first in-person meeting in March 2024. The partnership's main aim for the moment is to finalize the most relevant themes and guide further discussions to prepare an Orientation Paper.

Bibliography

Anant Jan et al. 2022. "Transitions to food democracy through multilevel governance." In Frontiers Volume 6 - 2022. https://doi.org/10.3389/fsufs.2022.1039127. https://www.frontiersin.org/articles/10.3389/fsufs.2022.1039127/full.

Arnalte-Mur, L., Ortiz-Miranda, D., Cerrada-Serra, P., Martinez-Gómez, V., Moreno-Pérez, O., Barbub, R., et al. 2020. "The drivers of change for the contribution of small farms to regional food security in Europe." Global Food Security 26:100395. doi: 10.1016/j.gfs.2020.100395.

Bakalis, S., Valdramidis, V. P., Argyropoulos, D., Ahrné, L., Chen, J., Cullen, P. J., et al. 2020. "How COVID-19 changed our food systems and food security paradigms." Curr. Res. Food Sci. 3:166–172. doi: 10.1016/j.crfs.2020.05.003.

Bortoletti, M., and J. Lomax. 2019. "Collaborative framework for food systems transformation." A multistakeholder pathway for sustainable food systems. UN Environment. ISBN: 978-92.

Calo, A., McKee, A., Perrin, C., Gasselin, P., McGreevy, S., Sippel, S. R., Desmarais, A. A., Shields, K., Baysse-Lainé, A., Magnan, A., Beingessner, N., and Kobayashi, M. 2021. "Achieving Food System Resilience Requires Challenging Dominant Land Property Regimes." Front. Sustain. Food Syst. 5:683544. doi: 10.3389/fsufs.2021.683544.

Cohen, N., and R. T. Ilieva. 2021. "Expanding the boundaries of food policy: The turn to equity in New York City." Food Policy.

De Boer, I. J. M., and E. M. de Olde. 2020. "Re-rooting the Dutch food system: From more to better." Wageningen University & Research.

Deh-Tor, C. M. 2021. "Food as an urban question, and the foundations of a reproductive, agroecological urbanism." In Resourcing an Agroecological Urbanism: Political, Transformational and Territorial Dimensions, edited by Ch. Tornaghi and M. Dehaene.

Directorate General for Internal Policies. 2013. "Challenges of multi-tier governance in the European Union. Effectiveness, efficiency and legitimacy." https://www.europarl.europa.eu/RegData/etudes/etudes/join/2013/474438/IPOL-AFCO_ET(2013)474438_EN.pdf.

Enthoven, L., and P. Van den Broeck. 2021. "Local food systems: Reviewing two decades of research." Agricultural Systems 193:103226. doi: 10.1016/j.agsy.2021.103226.

European Commission, Joint Research Centre, Foresight and Behavioural Insights Unit. 2015. "Global Food Security 2030. Assessing trends with a view to guiding future EU policies."

European Commission, Directorate-General for Research and Innovation, Group of Chief Scientific Advisors. 2020. "Towards a sustainable food system – Moving from food as a commodity to food as more of a common good: Independent expert report." Publications Office. https://data.europa.eu/doi/10.2777/282386.

FAO. 2019. "FAO framework for the Urban Food Agenda." Rome. https://doi.org/10.4060/ca3151en.

IPES-Food. 2019. "Towards a Common Food Policy for the European Union." https://www.ipes-food.org/_img/upload/files/CFP_FullReport.pdf.

IPES-Food. 2022. "The politics of protein: Examining claims about livestock, fish, 'alternative proteins' and sustainability."

IPES-Food. 2023. "Who's Tipping the Scales? The growing influence of corporations on the governance of food systems, and how to counter it."

Jeroen, J. L. Candel. 2019. "What's on the menu? A global assessment of MUFPP signatory cities' food strategies." Agroecology and Sustainable Food Systems.

Landert, J., Schader, C., Moschitz, H., and M. Stolze. 2017. "A Holistic Sustainability Assessment Method for Urban Food System Governance." Sustainability 9.

Perrin, C., and A. Baysse-Lainé. 2020. "Governing the coexistence of agricultural models: French cities allocating farmlands to support agroecology and short food chains on urban fringes." Rev. Agric. Food Environ. Stud. 101:286. doi: 10.1007/s41130-020-00105-z.

Manganelli, Alessandra. 2020. "Realising local food policies: A comparison between Toronto and the Brussels-Capital Region's stories through the lenses of reflexivity and colearning." Journal of Environmental Policy & Planning.

Sonnino, R., Tegoni, C., and A. De Cunto. 2019. "The challenge of systemic food change: Insights from cities." Cities 85.

Szulecka, J., Strøm-Andersen, N., Scordato, L., and E. Skrivervik. 2019. "Multi-level governance of food waste." 10.4324/9780429460289-13.

The Committee of the Regions. 2009. "White Paper on Multi-level Governance." https://www.europarl.europa.eu/meetdocs/2009_2014/documents/regi/dv/cdr89-2009_/cdr89-2009_en.pdf.

Triboi, Roxana, Irina Rotaru, and Adina Pasărel. 2023. *Ex-ante Assessment of the "Food" Thematic Area under the Urban Agenda for the EU. Final Report*. European Urban Initiative, June 2023.

Vaarst, M., Getz Escudero, A., Chappell, M. J., Brinkley, C., Nijbroek, R., Arraes, N. A. M., Halberg, N. 2018. "Exploring the concept of agroecological food systems in a city-region context." Agroecology and Sustainable Food Systems 42(6): 686-711. doi: 10.1080/21683565.2017.1365321.

Websites:

- https://www.urbanagenda.urban-initiative.eu/news/milestone-meeting-journey-food-partnership

- https://agriculture-architecture.net/

- https://buybetterfood.eu/documents/sustainable-food-procurement-manifesto

- https://eurocities.eu/latest/cities-hungry-for-recognition-in-eu-food/

- https://food.ec.europa.eu/horizontal-topics/farm-fork-strategy/legislative-framework_en

- https://food.ec.europa.eu/safety/labelling-and-nutrition/food-information-consumers-legislation_en

- https://food.ec.europa.eu/system/files/2022-06/gfl_expg_20220520_pres_fsfs.pdf

- https://foodpolicycoalition.eu/wp-content/uploads/2021/06/Sustainable-public-procurement-of-food-a-goal-within-reach_EU-FPC-website.pdf

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PAPER SESSION 4.A
PERI-URBAN
DYNAMICS

Proximity Agriculture in Underdeveloped Urban Areas: A Case Study in Matosinhos, Northern Portugal

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"Proximity Agriculture in Underdeveloped Urban Areas: A Case Study in Matosinhos, Northern Portugal"

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The accelerating urbanization in Portuguese cities poses significant threats to agriculture due to the escalating demands for infrastructure, housing, and economic development. This study investigates the potential of urban agriculture to bolster urban resilience and preserve agricultural activities amidst urban expansion, focusing on Matosinhos in the Porto Metropolitan Area. Matosinhos, characterized by a dense urban core, underdeveloped zones with small-scale food production, and a declining dairy farming sector, serves as a compelling case study for exploring models that integrate agriculture into urban areas to enhance food security and quality of life.

This study aims to analyze the existing urban agriculture scenario in Matosinhos, assess its potentials and constraints, and propose strategies for incorporating urban agriculture into the planning process of underdeveloped areas. The study adopted a multidisciplinary approach, integrating concepts such as the "15-minute city" and CPUL (Continuous Productive Urban Landscape). Through mapping, field visits, and interviews with stakeholders, various typologies of urban agriculture were identified, including agricultural fields, urban farms, institutional allotment gardens, and productive backyards.

It outlines diverse possible food-production typologies tailored to the local context, such as agricultural parks, community gardens, educational edible gardens, and food boulevards. These typologies are proposed as integral part of a "productive neighborhood" model, envisioning a network of multifunctional green spaces with urban agriculture to promote urban consolidation and resilience.

The study sought to contribute to the development of a comprehensive urban agriculture strategy for Matosinhos, aiming to address challenges related to food security, social cohesion, and quality of life. Community involvement was emphasized as crucial for the success of urban agriculture initiatives, highlighting the importance of establishing a food security council and engaging stakeholders in participatory planning processes. By aligning with key biodiversity strategies and territorial cohesion policies, the productive neighborhood model offers a pathway towards building more resilient and sustainable urban environments, in line with broader European initiatives such as the European Green Deal.

Keywords: Urban agriculture, Resilient cities, Food security, Sustainable urban development, Community engagement.

Introduction

The accelerating urbanization in cities worldwide poses significant threats to agriculture due to the escalating demands for infrastructure, housing, and economic development. Areas with agricultural character continue to be transformed to meet these demands, while planning strategies for their protection and enhancement remain underdeveloped. From the perspective of urban resilience, preserving and revitalizing these fertile lands within urban environments is crucial.

In Portuguese cities, metropolitan green areas are integral components of Municipal Master Plans. The Green Infrastructure Plan classifies and sets goals and guidelines for the maintenance and development of these areas in the long term. The first goal of the Matosinhos green infrastructure plan is "to contribute to ecological balance and to the protection, conservation, and enhancement of environmental and landscape values in rural and urban spaces" (CCM$_1$, 2019). Given that green infrastructures should always be planned to maximize the ecological balance and the provision of ecosystem services to the population, there is

significant potential to expand these benefits by incorporating agroecological principles into the planning process.

Agroecological principles, beyond ecological food production, encompass many relevant dimensions for modern society, such as environmental justice, right to the city, public health, solidarity economy, among others (Simón-Rojo, 2021). Through this vision, new strategies for planning urban green infrastructures can be envisioned, offering greater benefits to the population through participatory planning processes that result in multifunctional green spaces with urban agriculture.

The "15-minute city" (Moreno et al., 2021) has been widely discussed for its primary goal of promoting quality of life through social and territorial cohesion strategies, suggesting that maximum urban quality of life can be achieved through holistic, locally focused planning. This concept shares many parallels with the concepts of proximity agriculture (Tulla & Vera, 2019) and CPUL (Continuous Productive Urban Landscape) (Viljoen & Bohn, 2014).

CPUL is the first design concept to advocate the planned integration of food production into cities at the infrastructural scale. CPUL proposes a network of open urban areas as multifunctional spaces, incorporating agriculture. Key features include shared outdoor spaces for activities like food growing, leisure, mobility, and trade, serving both people and natural habitats. Essential components of the concept involve non-vehicular circulation routes and ecological corridors (Bohn & Viljoen, 2014).

Matosinhos, municipality characterized by a dense urban core, underdeveloped zones with small-scale food production, and a declining dairy farming sector, serves as a compelling case study for exploring models that integrate agriculture into the urban landscape to enhance food security and quality of life. This study aims to analyze the existing urban agriculture scenario in Matosinhos, assess its potentials and constraints, and propose strategies for incorporating urban agriculture into the planning process of underdeveloped areas.

Adopting a multidisciplinary approach, the study integrates the concepts of the "15-minute city," proximity agriculture, and CPUL. The objectives were to identify the current situation and propose new typologies of food-productive spaces. The envisioned outcome is a network of multifunctional green spaces with urban agriculture, termed the "productive neighborhood", a planning strategy to promote urban consolidation and resilience.

Methodology

The study area encompasses AUDAC 140, suggested by the Municipality of Matosinhos, and an outer area defined by a 15-minute walk from its center [fig.1], using the tool developed by Banza (2023). AUDAC (Available Urban Areas to Consolidate) are underdeveloped areas lacking planning in terms of mobility and green infrastructure, as defined by the master plan of Matosinhos (CCM$_2$, 2019).

[fig.1] Aerial images of the study area. Source: elaborated by the research team using Google Earth Pro.

Significant urban elements were mapped in the study area using Google Earth Pro: metro and bus stations, schools, recreational areas, food markets, health and social facilities, and brownfields.

To understand the status quo of urban agriculture in the study area, "The CPUL Opportunity Mapping Method" (Bohn & Tomkins, 2024) was applied. This methodology aims to integrate urban agriculture and food system activities into a holistic proposal named CPUL City. The "inventory of urban capacity" represents the first phase, applied in this mapping process.

A thorough territorial analysis was developed to identify, map, and classify existing food production areas, namely urban farms, productive backyards, agricultural fields, unauthorized production areas, production areas near brownfields, institutional allotment gardens, and productive rooftops. Other green areas were also mapped to identify potential food production areas.

Field visits to selected food production areas were conducted in a second phase to gather more information through interviews with producers. These interviews aimed to understand the social profile and motivations of the producers, land use agreements, production models, and other important information. This provided deeper insights into the potentials and constraints of existing food production activities, as well as mobility and territorial cohesion challenges.

Results

The study area encompasses parts of the parishes of Senhora da Hora, Custóias, Leça do Balio, and São Mamede de Infesta, with 27,000 estimated residents (INE, 2021). Covering approximately 4.540 km², it includes about 3.350 km² of grey structure and 1.190 km² of green structure. It is a low-density urban area featuring several residential neighborhoods with single-family houses and social housing complexes, local commercial activities, and numerous vacant green areas. The urban fabric offers limited street connectivity, with many dead ends. It lacks bike lanes, but benefits from a good public transport system, with buses and some metro stations.

The spatial analysis reveals a well-distributed presence of essential urban elements, such as schools (primary and secondary), food markets (like greengrocers, local markets, and supermarkets), health facilities (such as pharmacies and primary health care center), social facilities (like parish council and churches) and recreational areas (such as sport fields, parks, squares, and public gardens). Few brownfields were identified, such as one cemetery and possible industrial ruins around a deactivated quarry.

Identifying, Mapping, and Classifying Existing Food Production Areas

Forage fields identified in the study area were labeled as agricultural fields [fig. 2.a]. These fields are cultivated to feed housed cattle, as Matosinhos still maintains a tradition of dairy farming. Other well-established food-productive areas, primarily near social housing complexes and residential lots, have existed for over 40 years. This typology, labeled as urban farms [fig. 2.b], serve as subsistence farms, fostering family food supplementation, social cohesion, and well-being, primarily among elderly farmers.

[fig.2] Aerial image of agricultural fields (a) and two different urban farms: one is cultivated along the back edge of a residential neighbourhood, visually hidden from the street. A nearby resident informed that the area is private, and the owner authorized the nearby residents to cultivate it many years ago (b1). The other one is easily visible from the street and is cultivated by people living in a nearby residential complex. One of the farmers said that this area is partly public and partly private but also has a usage concession. Both urban farms are collectively cultivated but divided into individual plots by each farmer (b2). Source: elaborated by the author using Google Earth Pro.

Two institutional allotment gardens [fig. 3] were mapped in the study area: Horta de Custóias (34 plots) and Horta da Senhora da Hora (45 plots), offered by the "Horta à Porta" program, a partnership between LIPOR (the waste management company) and several municipalities from the Porto Metropolitan Area. While Horta à Porta offers 11 allotment gardens in Matosinhos, there are over 1000 people of this county in the waiting list, according to 2021 data (Teixeira, 2021). Gardeners, who were mostly seniors, reported many benefits from the project such as family food supplementation, social cohesion, and well-being. Many of them work other urban plots nearby. Since this is Matosinhos sole urban agriculture program, there appears to be untapped potential to expand the urban agriculture strategy, given the growing interest from the general population.

[fig.3] Aerial image of Horta de Custóias (a) and Horta da Senhora da Hora (b). Source: elaborated by the author using Google Earth Pro.

Numerous single-family residential lots were found to have edible gardens, fruit trees, and small animal husbandry in their backyards, reflecting Portuguese cultural practices. These areas were classified as productive backyards [fig. 4.a.]. Some interviewed residents reported exchanging fresh produce and seeds among them. A productive rooftop [fig. 4.b], installed on a small industry's roof was also identified.

[fig.4] Aerial image of productive backyards (a) and productive rooftop (b). Source: elaborated by the author using Google Earth Pro.

In the central vacant green area, food-productive areas were found around a deactivated quarry, benefiting from favorable topographical conditions for cultivation. A temporal analysis of aerial images revealed the emergence of two of these areas during the 2008 economic crisis and the 2020 COVID-19 pandemic. Although direct contact with farmers was not possible during the field visit, aerial images indicated subsistence production practices. Environmental challenges, such as litter accumulation, abandoned cars, and remnants of past industrial activity, render this area unsuitable for food production. This typology was defined as unauthorized productive areas [fig. 5]. Currently, plans are underway to develop this vacant green area into a new park for the community. However, there is no established strategy to relocate these farmers to more suitable areas for food production.

[fig.5] Aerial image of unauthorized productive areas. Source: elaborated by the author using Google Earth Pro.

Potential Food Production Spaces

Apart from the above-described areas, there are several other areas with food production potential: vacant lands, parks, squares, green areas nearby residential buildings, schools, social and health care facilities, non-cultivated backyards, streets that already have or allow the implementation of roadside flower beds and tree lines, among others.

A key aspect of the study involved considering all green areas in the territory as potential spaces for new food production activities. Multiple criteria were devised to categorize areas based on their suitability for various typologies of food production spaces, such as size, current use, existing design, tree cover area, proximity from residential buildings, schools, social and health care facilities, presence of brownfields, and other characteristics that were possible to identify through the aerial images. This approach aims to accommodate diverse functions, benefits, and social groups within the urban agriculture framework. Table 1 summarizes and characterizes potential food production typologies to be introduced in this area, and this interactive map spatializes the "Productive Neighborhood" proposal.

Typology	Target areas	Description	Main potentials	Target population
Agricultural Park	Large-scale vacant green areas with existing agricultural activities (mainly agricultural fields and urban farms).	Mix between recreational parks and agroecological farms, that offers Farm School with larger plots (100 to 200 m²), and fresh food market.	Valorizes and publicizes agroecology and supports agroecological transition, while promotes recreation, professional education, and other social benefits.	General population and people who are interested to get professional formation in agriculture.

Community gardens	Green areas available around or centered in residential buildings; parks, squares.	Mix between recreational and food-productive elements, must offer common areas.	Promotes intergenerational activities, social cohesion, and well-being.	Local population.
Educational edible gardens	Green areas available around, near or into schools, social and health care facilities.	Small-scale edible gardens are intended to provide contact with nature and food-growing education.	Promotes recreation, education, and well-being.	Children, youth, and general people supported by social and health facilities.
Food boulevards	Streets that already have or allow the implementation of roadside flower beds and tree lines, especially the ones with slow traffic in residential neighborhoods.	This typology aims to connect all the food-productive typologies proposed, greening through edible gardens and tree lines.	Improves soft mobility, beautification, and many other social-environmental benefits.	General population.
Food forest	Large-scale green areas that already have tree communities; parks, squares.	Enrich the forest with edible trees and shrubs and other food production activities (honeybees, mushroom collection, etc.).	Promotes environmental, ecological, social, and economic benefits.	General population and people who are interested in grow forest products.
Institutional allotment garden	Public or private medium-scale vacant areas; parks.	The allotment garden could offer, beyond the plots, well-structured common areas and other elements to promote social cohesion and intergenerational activities around food subject. The structure can be designed with low-cost implementation in private areas under land use agreements.	Promotes food security, social cohesion, well-being, and intergenerational activities through food-growing activities.	Local population.
Urban orchard	Green areas that already have tree communities, vacant green areas, parks, squares.	Trees and shrubs adequately planted to agroecological fruit production.	Supports agroecological transition, promotes recreation, social cohesion and has potential to offer fruit production training.	Local population and people interested in commercial fruit production.
Productive backyards program	Proposed to support residents with productive backyards and encourage the creation of new ones.	People interested in support for maintenance can offer their backyards to people who is interested in grow food, exchanging mutual benefits.	Promotes food security, social cohesion, and well-being.	Residents with productive backyards and people interested in grow food.
Urban farms program	Proposed to support urban farmers and encourage the creation of new farms.	Offers technical support to agroecological transition. Financial support and facilitating access to land could enhance the existent urban farms and creation of new ones.	Supports agroecological transition, food security, professional formation, and local economy benefits.	Urban farmers.

Table 1: Proposed food-production typologies.

Discussion and conclusions

This study is an initial step in showcasing the potential for enhancing resilience through urban agriculture in Matosinhos. As said by Cabbanes & Marocchino (2018, pg. 31), "integrating food into urban planning does not depend so much on the entry point […]. What is at stake, to get to a systemic plan that will be sustainable over time, relates to the capacity of the urban food planning process to gradually connect the different dots (hunger, poverty, food waste, health, etc.) in a coherent, comprehensive, and systemic way".

The "productive neighborhood" model aimed to provoke reflection on how it is possible to maximize numerous ecosystem services provided by urban green infrastructure through the inclusion of agroecological principles in the planning process. This model has the potential to support and promote agroecology transition, enhancing food security, social cohesion, well-being, public health, intergenerational activities, professional education, and local economic benefits. It also encourages right to the city, solidarity economy, recreation, soft mobility, beautification, while stimulating the flow of people and local fresh products. Given this potential, this model aligns with key biodiversity strategies for 2030, such as the "Farm to Fork Strategy" and "Bring Nature Back to Our Lives," central to the European Green Deal. It also supports territorial cohesion, contributing to policies like RURBAN, agreed upon by the European Parliament in 2010 and managed by the European Commission.

For the "productive neighborhood" model to become feasible, various factors, actors, and processes must be considered during the development of an action strategy. Community involvement in participatory planning processes is essential for building an agroecological strategy. A key tool for establishing a resilient urban food system is the creation of food security councils. These councils bring together community members, farmers, experts, municipal agents, and other interested parts in the food system. Their involvement ensures that strategies are grounded, enhancing their potential for integration, implementation, and long-term sustainability.

Conducting a detailed evaluation of each available green area and its social economic and environmental context is essential, exploring the municipal territory to assess all potentials and constraints. But, promoting education on the benefits of food-productive activities in urban environments is a fundamental next step. Citizenship laboratories and workshops could be organized for this purpose, fostering discussions. This participatory process will also help identify interested parties to compose the municipal food security council, ensuring that urban agriculture become integral to a comprehensive strategy for food security in the municipality.

Beyond the participatory planning process, interested groups should be involved and supported by the public authorities during the implementation and long-term maintenance of food-productive activities. This ensures that these initiatives can establish themselves and provide benefits continuously.

Regarding governance, different urban agriculture strategies may have distinct objectives and thus should be managed by different municipal sectors, in collaboration with each other and with project stakeholders. Regarding the productive neighborhood's typologies, Agricultural Parks, Urban Orchards, Food Forests and Urban Farms Program have potential for technical training in professional food production and are ideally managed by sectors involved with education, innovation, and the environment. Similarly, typologies such as Educational Edible Gardens, Institutional Allotment Gardens, Community Gardens, Food Boulevards, and Productive Backyard Program offer environmental education, social cohesion, and health benefits for all ages. Therefore, such projects could be managed collaboratively by municipal sectors involved with education, social, health, and environment issues.

Acknowledgements

Bibliography

Banza, M. (2023). Lisboa como cidade dos 15 minutos - Um mapa interativo. April, 2023. https://manuelbanza.github.io/lisboa-cidade-15-mins-versao-2/

Bohn, K. and Tomkins, M. (2024) Urban food mapping: Making Visible the Edible City. Taylor & Francis.

Cabannes, Y. and Marocchino, C. (2018). Food and urban planning. In: Y. Cabannes and C. Marocchino, eds. Integrating Food into Urban Planning. London: UCL Press; Rome: FAO, pp. 31. https://doi.org/10.14324/111.9781787353763

Câmara Municipal de Matosinhos (CMM1) (2019). Estrutura Ecológica Municipal de Matosinhos. Relatório. Junho 2019. https://www.cm-matosinhos.pt/cmmatosinhos2020/uploads/document/file/7129/estrutura_ecologica_municipal_relatorio.pdf

Câmara Municipal de Matosinhos (CMM2) (2019). Revisão do PDM de Matosinhos. Relatório –1B. Maio 2021. https://www.cm-matosinhos.pt/cmmatosinhos2020/uploads/document/file/7137/relatorio.pdf

Instituto Nacional de Estatística (INE) (2021). Censo 2021: Resultados Definitivos. Available at: https://www.ine.pt

Moreno, C. et al. (2021) 'Introducing the "15-Minute City": Sustainability, resilience and place Identity in future Post-Pandemic Cities,' Smart Cities, 4(1), pp. 93–111. https://doi.org/10.3390/smartcities4010006.

Simón-Rojo, M. (2021) 'Powering transformative practices against food poverty with urban planning,' Urban Agriculture & Regional Food Systems, 6(1). https://doi.org/10.1002/uar2.20021.

Teixeira, A. (2021). Pandemia está a chamar mais pessoas para hortas urbanas. Jornal de Notícias, March, 2021. Available at: https://www.jn.pt/nacional/pandemia-esta-a-chamar-mais-pessoas-para-hortas-urbanas-13482326.html https://www.jn.pt/nacional/pandemia-esta-a-chamar-mais-pessoas-para-hortas-urbanas-13482326.html/

Tulla, A.F. and Vera, A. (2019) 'Could Social Farming be a Strategy to Support Food Sovereignty in Europe?,' Land, 8(5), p. 78. https://doi.org/10.3390/land8050078.

Viljoen, A. and Bohn, K. (2014) Second nature urban agriculture: Designing Productive Cities. Routledge.

PAPER SESSION 4.B MOVING WITH THE FARMERS

Building food self-sufficiency from a territory of conflict

— MIGLIO Alessandra

Building food self-sufficiency from a territory of conflict

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Diverse local initiatives of resistance arise against the land grabbing by the agro-industrial complex and the land artificialization. These struggles often lead to a collective process of setting up peasant farms, and sometimes they succeed in subtracting large areas of land from the capitalist production system - in the case of this study, 1650 hectares of hedged farmland threatened by a new airport project near Nantes. This study first analyses how the inhabitants of the Notre-Dame-des-Landes '*zad*' deal with the issue of food subsistence. Then it examines the relationships between *zad*'s farming activities and the agro-industrial system, based on field observations on land, technological, epistemological, economic and normative issues. The *zad* is a complex reality with conflicts and interdependencies, where neo-peasant farms aiming for economic profitability coexist with subsistence agricultural practices. The survey reveals a collective and multi-scalar conception of self-sufficiency, giving rise to a vast network of material interdependencies among territories in struggle. Given its history and specificities, I will bring to light that the *zad* is not a model to be generalized. Rather, it is an experiment in otherness, overturning some self-evident truths that underlie our relationship with agricultural and food issues.

Keywords: collective subsistence; food self-sufficiency; resistance against agro-industrial complex ;

Introduction

In our Western societies, agriculture has never been so far removed from the daily lives of most of the population as it is today[1]. In response to this disempowerment about agricultural and food issues, local protest movements emerged in the last decades for the reappropriation of the means of subsistence and for the defence of agricultural land against land grabbing by the agro-industrial complex or against what activists call Unnecessary Imposed Mega Projects of artificialization (airports, highways, etc.). Sometimes activists occupy the lands and work collectively for the food subsistence of the struggles, giving rise to a profusion of alternative neo-peasant experiences.

My research focuses on these forms of struggle known as '*zad*' (French acronym meaning 'zones to be defended'), and on the ways they take collective responsibility for agricultural and food issues. How these communities deal with the issues of subsistence? How do their farming activities emancipate themselves, if so, from the productive framework imposed by the dominant model? On what scale is food self-sufficiency conceived?

My research field is the Notre-Dame-des-Landes (NDDL) *zad*, in north-western France. Because of its historical depth and spatial extent, the NDDL struggle is considered as paradigmatic of the history of land-use conflicts (Rialland-Juin, 2016). On this area of 1,650 hectares of hedged farmland [fig.1], grassroots movements have been fighting over forty years against an airport project. It has a complex history, with several turning points such as the abandonment of the airport project in 2018 which led to strong internal conflicts (Comm'Un, 2019). Today, under pressure from the central government, most of the squatters are regularizing their presence and the very purpose of the struggle has changed: this community of around 200 inhabitants is now fighting to maintain a collective management of the land, to prevent it from being grabbed by the nearby industrial farms, and to defend the collective semi-secessionist way of life that emerged during the illegal occupation (Comm'Un, 2019). This article, taken from my Master's dissertation[2], will first describe the organization of *zad*'s food system (the agricultural projects and their interconnections, productions and distribution modes). The second part examines the emancipation strategies of *zad*'s farming activities from the agroindustry. Finally, the third part examines the *zad*'s conception of self-sufficiency and its political implications, trying to nuance the representations that people might have about it.

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[1] Before the industrial revolution, over 60% of the French population made their living from agriculture while today only 1% work in this sector (Les Greniers d'Abondance, 2020).

[2] MIGLIO, A. (2023). *Resisting the agro-industrial system. Investigation into the forms of collective self-sufficiency on the Notre-Dame-des-Landes zad*. Master dissertation in architecture, Marseille National School of Architecture.

[fig.1] Friday 3ʳᵈ February 2023. The hedged farmland after the rain. Source: elaborated by the author.

Conceptual framework

I choose to structure the analytic framework of the emancipation strategies of the *zad*'s peasants using the notion of 'new enclosures' which I borrowed from the Anthropocene specialist Bertrand Valiorgue. Valiorgue explains that the organization of our food systems is locked because of the control of large agro-industrial companies on the production chain upstream and downstream of farms. This was made possible by the multiplication of 'enclosures', a socio-political phenomenon of privatization and concentration of collective resources by a small number of actors who legally manage to obtain an individual and exclusive ownership over them. If this phenomenon of 'enclosure' began in England in the 16th century with the privatization of communal land (Verdier, 2021), it is now extended to genetic resources, knowledge, technologies and other vital resources (Valiorgue, 2020). As a result of this enclosure, agro-industrials actors can manipulate markets and create dependence among conventional farmers, locking their choices of agricultural practices. This is how the material conditions of our food security are getting more and more beyond the control of institutions and civil society. In the light of this notion, the second part of my work is an investigation on the compromises and means implemented by the peasants of the *zad* to overcome these 'new enclosures' in the fields of land, technology, knowledge, economic and normative issues.

Methods

In terms of methodology, my research was based on the bibliographical study of scientific and non-academic literature, and on an ethnographic survey with fifteen local peasants. Since autumn 2022, I have made two fortnight-long field trips, the second of which involved a critical re-reading of a first version of my writing by the residents concerned. The revised text is accompanied by drawings describing practices, people and technical objects encountered. After defending my Master dissertation in June 2023, I concluded this research experience with a public presentation at the *zad*'s library, where I left some copies of my work. During the whole survey I was led to question myself about the ethics of research in an activist environment. I particularly reflected on non-extractivism issues, on transparency towards the

people being surveyed, on the challenge of reporting on the complexity of the situation, on the security issues in disclosing some information, and finally on the search for a correct position as a researcher but also as an activist having personal links with some of the people observed.

Results

A portrait of the zad's agri-food systems

The farmers of the *zad* carry out a wide range of agricultural activities including horticulture, cereal growing, honey production and sheep and bovine rearing for meat and dairy production. Local peasants have also developed some processing equipment such as a canning factory, a cheese factory, a flour mill, several bakeries, and brewery. In addition to food production, forestry and sawmill activities provide wood for heating and for building. All that enable the zadists to satisfy their needs in a semi-autonomous way from traditional food circuits. But how are these productive activities organized? Taking stock of the *zad*'s agricultural production systems was a complex task because of the absence of any unifying logic, which reflects, by the way, the libertarian attitude of this community. Nonetheless, I defined four production and resource-sharing systems using a four-quadrant diagram [fig.2] in which I sorted the peasant activities by their degree of collective action (vertical axis) and by their relation to market (horizontal axis, from strictly subsistence practices to the ones integrating the market system).
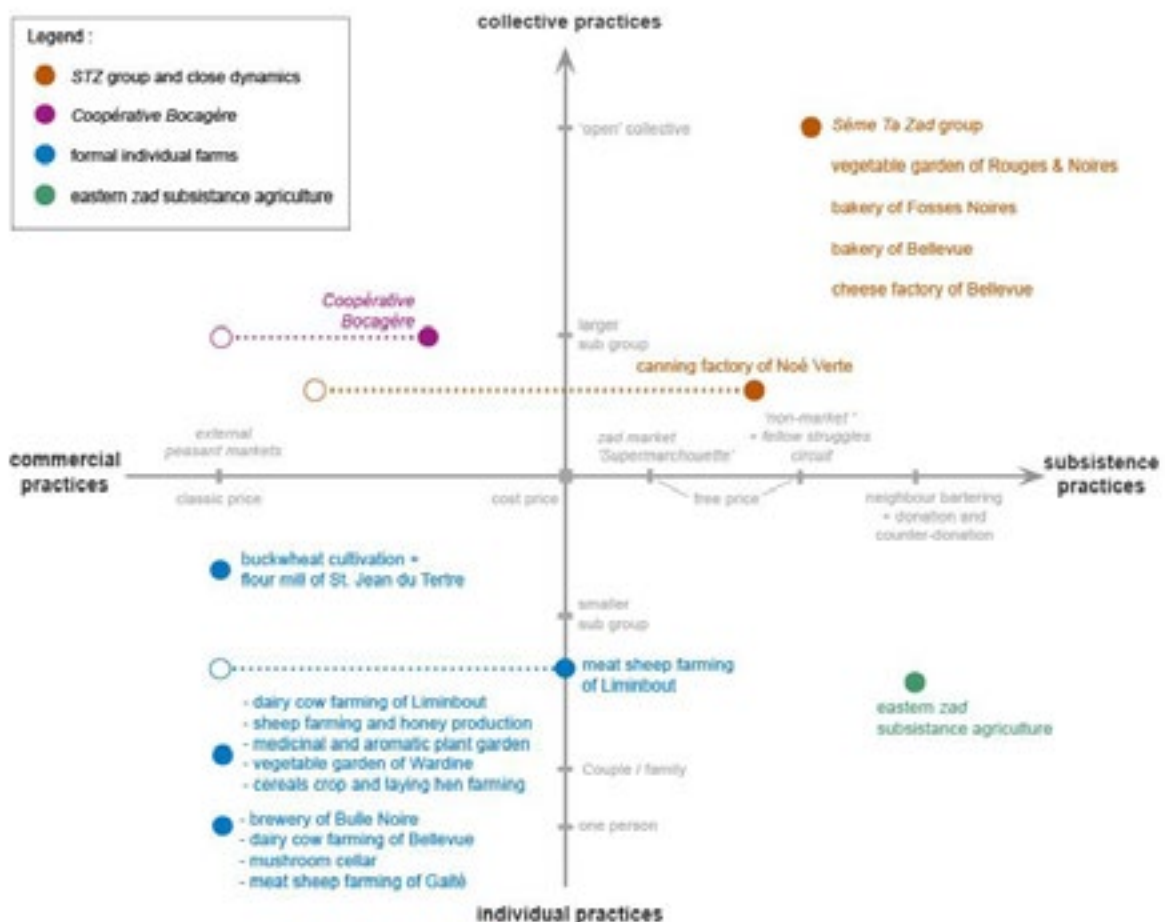
[fig.2] An attempt to diagram the zad's agricultural activities. Source: elaborated by the author.

What I have called the 'formal individual farms' are neo-peasant installations resulting from the individualisation of farming projects imposed by the government after the abandonment of the airport project. They aim for economic profitability and sell their products on farmers' markets outside the *zad*, sometimes maintaining non-commercial exchanges with other agricultural initiatives in the area. The group named *'Sème ta zad'* is a collective, purely subsistence

farming initiative, which cultivates land to nourish the movement and the fellow struggles. Here, the practice of the free price proves the absence of any injunction to economic profitability. Hybrid forms exist, between non-monetizing and integration into classical economic schemes: the *Coopérative Bocagère* combines a subsistence economy at the scale of a sub group as well as short-circuit sales on peasant markets. For its members, this partial integration into the market allows to develop technical infrastructures, in particular in the wood sector which benefits to the whole movement, as well as the possibility to distribute resources at lower prices or even freely within nearby militant networks. There are also more experimental forms of subsistence agriculture in the eastern part of the *zad*, bartering between neighbours, and unconnected from the other forms of collective organizations. The occupants of this area have historically rejected motorization as well as speciesist practices, and their activities remain outside any regulatory framework.

This diagram is to be considered as a kind of compass to navigate the complex reality of the *zad*. However, such a categorization should not erase the porosities and interdependencies between these different organizations, nor the internal complexity of each system.

Paths to emancipation

The strategies built on the *zad* against agri-food system 'enclosures' are many and varied.
- Land strategies.

We have seen that the grabbing of agricultural land is the oldest form of 'enclosure'. On the *zad*, the struggle has enabled several dozens of new peasants to get access to land, which is otherwise extremely difficult for anyone wanting to start a farm activity outside the family framework. Since 2018, these neo-peasants have signed individual agricultural leases covering 310 hectares of land. The movement against the airport has succeeded in securing the use of almost 800 hectares of land, including the forest parcels and the 360 hectares belonging to farmers who have refused expropriation by occupying their own land The area has also undergone a re-division of land parcels which runs against the trend of land consolidation since the 1950s. Farmers in the *zad* have developed customary practices such as common crop rotations and collective hedgerow management, which counter the traditional regime of individual land ownership and management. As a result, this area is characterised by the superposition of different land uses and a mix of activities regulated by a collective governance. Despite this shift away from the dominant regime of private land ownership, the *zad* still faces persistent administrative uncertainty. Concerning the use of land, and so agricultural leases, negotiations with the Departmental Council are still in progress in order to get the activities and houses of the inhabitants out of their precarious status. This land struggle is confronted to the State's categorical refusal to legally recognise any collective entity emerging from the movement. In terms of land property, an endowment fund was created in order to buy the land and 'dilute' individual private property into a collective found, but the Departmental Council still refuses to sell the land. If these obstacles lead, on the one hand, to increasingly individualistic behaviours, on the other hand a large part of the community still organize agricultural activities collectively in a fictitious compromise with the administration.
- Technological autonomy strategies.

Within certain groups of zadists I observed a noticeable reappropriation of pre-industrial techniques, such as animal traction for plowing fields [fig.3]. These technoiques are defined by the 20th-century thinker Ivan Illich as 'convivial' (Illich, 1973), as they are tools that humans can master both intellectually and practically. Nevertheless, there is a constant negotiation between the ideal of technological conviviality and the utilization of motorized machines for certain tasks. The quest of technological autonomy is notably supported by the Curcuma collective, which organizes workshops for the maintenance and repair of communal agricultural machinery. This facilitates the sharing of technical knowledge about mechanics and the driving of such machines, without resorting to professionals. The blacksmith is also central in the *zad*'s technical autonomy, as he can fix also 'non-convivial' tools, in a non-commercial perspective. Finally, it is crucial to note that there is no dogmatism in the zadists' search of technological emancipation, and that moreover this ambition is not uniformly shared or pursued with the same level of commitment by all the peasants.
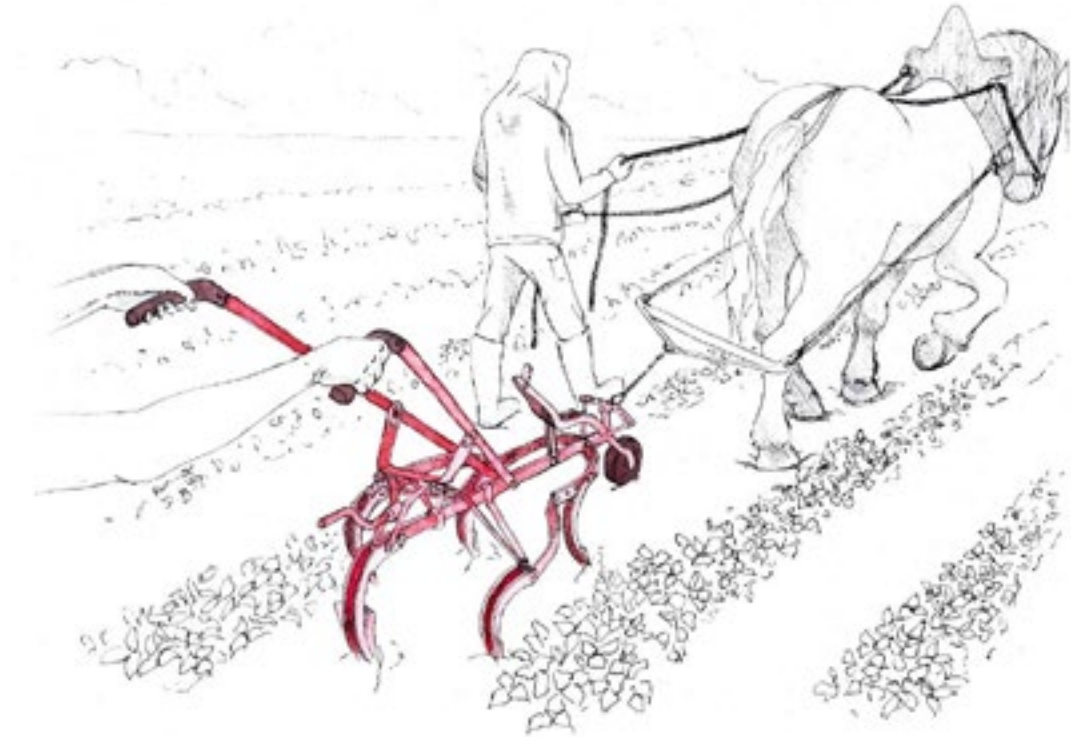
[fig.3] Monday 31ˢᵗ October 2022. Animal-drawn hoeing of beans. Source: elaborated by the author.

- Epistemic enclosure.

On the *zad* I observed the breaking down of barriers between disciplines and know-how that oppose the compartmentalization of knowledge, the professionalization of practices, and the standardization of tasks (Wittorski, 2008) typical of our productive system. According to some anthropologists, the end of peasants due to agricultural modernization in the last century (Mendras, 1967) inevitably led to the loss of peasant knowledge (Sallustio, 2020). On the contrary, the zadists' search of subsistence has led to a certain 're-vernacularization' of knowledge: my field observations show that subsistence processes required the nuanced understanding of ecosystems and interdependencies, and so a complex and interdisciplinary knowledge. Concerning the know-how, the paradigm of 'poly-activity' (Pruvost, 2021) prevails: most zadists have skills in agriculture, animal rearing and care, raw material processing, tool maintenance, dwelling self-construction, machines operation, etc., and the collective mutual aid allow access to skills not yet mastered individually.

- Economic and regulatory issues.

The question of economic viability is still debated among the zadists. For the farmers engaged in subsistence agriculture, the choice of a non-commercial approach has significant counterparts. With the exception of some formal farmers and certain members of the Cooperative, peasant work is not financially remunerated. It is integrated into a subsistence economy that allows individuals to considerably reduce their financial needs. The study highlighted some strategies allowing to shield agricultural activity from productivity obligations dues to farming status. There is a shift in values from profit and efficiency towards the satisfaction of the primary needs of the collective and caring for living beings. The pursuit of this ideal has some impacts the comfort of farmers' work and their ability to make investments in agricultural equipment: scavenging and recycling are very common practices, as is the need to plan longer working hours due to on-the-job learning. Although several practices indicate a rethinking of dominant conceptions of work and economic value, it remains difficult for *zad* peasants to fully emancipate themselves from the regulatory constraints linked to the CAP agricultural subsidies, such as inspections related to organic certification or the prohibition of on-farm slaughtering. Without going into more detail, the four categories described have different relationships to economic and regulatory issues, which crystallize persistent conflicts.

Collective self-sufficiency: towards a freedom rooted in interdependence

This final section of the article returns to the notion of self-sufficiency as embraced by the zadists. First, the *zad* is not autarkic. Its inhabitants obtain certain food items from supermarkets or through a network of exchanges with other fellow alternative realities. My interviews with the zadists revealed a conception of collective and multi-scalar self-sufficiency exceeding the boundaries of the *zad*. The vast network of material interdependence and solidarity between struggling territories, of which the *zad* is part, provide the means of this collective subsistence on the margins of the capitalistic system, allowing to transcend the limits of small local ecosystems. For the zadists, material self-sufficiency is essential for the political autonomy of protest movements. Unprecedented in Europe in our generation, this territory has become a material base for a large number of anti-capitalist struggles. By developing the skills and material infrastructures I described, the inhabitants of the zad are able to make a true political rupture (Morel and Darrot, 2018), opening the perspective of a new freedom conceived as the abolition of dominations based on material dependence on a industrial production system and salary relationship to work. Consequently, the fieldwork shows that 'seceding' from the capitalist system and the State (Comm'Un, 2019) does not lead to rejecting all forms of interdependence, but rather to the rejection of so-called 'asymmetrical dependencies' (Berlan, 2021). By establishing chosen interdependencies with other fellow territories in struggle, the zadists emancipate themselves because they take back the control over their dependencies.

Conclusion

I will conclude by reflecting on the scope of this work and the ongoing experience of the *zad*. At the end of my investigation, it becomes apparent that the *zad* hosts very diverse stances towards agricultural and subsistence issues, that generally manage to coexist despite the absence of common lines engaging all inhabitants. The *zad* keeps being crossed by numerous unresolved contradictions and conflicts, leading us to detach ourselves from a certain naive vision of what we call 'alternatives'. Moreover, *zad* peasants are constantly seeking compromises in their organizations within this unprecedented land situation which followed the abandonment of the airport project. This leads to a state of permanent change that makes pointless any attempt to represent the complexity of what is taking place on this territory in a univocal and fixed manner. Given its struggle history and specificities, the *zad* does not represent a generalizable model, nor does it wish to be one. With its great internal complexity, the hedged farmland of Notre-Dame des Landes rather represents an experience of otherness, daring to question and overturn in practice certain assumptions that underlie our relationship to agricultural and food issues. In my view, the experience pf the *zad* is particularly valuable as it involves a significant area of land that has been partly set free from the influence of the agro-industrial system and in which it is possible to put into practice some property, production, and exchange relationships that escape the injunctions of economic rationality of the market.

Bibliography

Berlan A. (2021). *Terre et liberté. La quête d'autonomie contre le fantasme de Délivrance.* La Lenteur.

Collectif Comm'Un (2019). *Habiter en lutte. ZAD de Notre Dame des Landes, quarante ans de résistance.* Le passager clandestin.

Illich I. (1973*). La Convivialité*. Seuil.

Les Greniers d'Abondance (2020). *Vers la résilience alimentaire.* Yves Michel.

Mendras H. (1967). *La fin des paysans*. Actes Sud.

Morel K. and Darrot C. (2018). Changer de monde ? La contribution de la zad. *Pour,* 234-235, 287-295.

Pruvost G. (2021). *Quotidien politique. Féminisme, écologie, subsistance*. La Découverte

Rialland-Juin C. (2016). Le conflit de Notre-Dame-des-Landes: les terres agricoles, entre réalités agraires et utopies foncières. *Norois,* 238-239, 133-145

Ross K. (2024). *The Commune Form: The Transformation of Everyday Life*. Verso Books.

Sallustio M. (2020). Moissons conviviales. *Techniques & Culture* 74, 178-193.

Valiorgue B. (2020). *Refonder l'agriculture à l'heure de l'anthropocène*. Le bord de l'eau.

Verdier M. (2021). *Une sociologie anarchiste de la zad de Notre-Dame-des-Landes.* Éd. du Croquant.

Wittorski R. (2008). La professionnalisation. *Savoirs* 17, 9-36.

Promoting Farmers' Innovation for Food Security and Agrobiodiversity

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Promoting Farmers' Innovation for Food Security and Agrobiodiversity

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With the growth of industrial plant breeding, farmers' role as plant breeders has been side-lined in the plant innovation debates. Farmers' varieties, characterized by their resilience and heterogeneity, are particularly well-suited to marginal and low-input environments. These varieties are crucial for ensuring food and nutritional security, especially for small and marginal farmers. Farmers have initiated various efforts to regain, maintain, and enhance their control over seeds. However, the highly regulated nature of seeds necessitates navigating a complex regulatory landscape. While risk prevention regulations view seeds as potential risks to human health and the environment, market regulations treat seeds as goods that must meet quality, identity, and productivity standards, and intellectual property rights (IPRs) provide market incentives for seed development. These regulations can constrain farmers' ability to operate as breeders and restrict their innovation.

This paper examines the legal challenges faced by farmers in plant breeding, emphasizing the importance of farmers' innovation for agrobiodiversity and food security.

Keywords: plant breeding; farmer-breeder; plant variety protection; farmers' rights; innovation; plant genetic resources

Farmers in plant breeding:

Plant breeding was almost exclusively carried out by farmers themselves until the late nineteenth century (Sanderson, 2017, p.22). Modern scientific breeding only started after the development of a new science of genetics based on rediscovery of Mendel's publication in 1900. The establishment of the plant breeding industry soon followed, shifting the focus of plant innovation from farmers to corporations. The subsequent history of the seed breeding industry revolves around the development of legal and technological means to secure a repeated purchase of seeds by farmers (Pistorius and Van Wijk, 1999; Bowler, 2009; Mayr, 1982). Consequently, the current laws consider farmers as passive users of "genetic material" that is developed outside the communities and then made available to them primarily through sale (Frison, 2018; Desclaux, 2020; GNRtFN, 2018; Wattnem, 2016). This has led to significant genetic erosion, shifting from traditional methods where farmers adapted crops to specific environments and uses, resulting in diverse varieties, to more modern, uniform practices (Ceccarelli, 2012). Although these new varieties were successful in uniform environments, they led to environmental degradation, and significantly reduced agricultural biodiversity. (Ceccarelli, 2012)

Farmers' role in plant breeding did not receive adequate attention even from the international scientific community and civil society organisations till the 1980s, and they considered farmers as strictly seed users and savers (Mooney, 2016, p.103). Farmers' role as plant breeders who continue to breed new varieties was highlighted by farmers' organisations through the seed sovereignty movement by the 1990s (Mooney, 2016, p.103). Both in the Global North and South, farmers have been taking initiatives in various forms to regain, maintain and increase their control over seeds (Vernooy et al., 2015). In Spain, the Spanish seed network 'Red de Semillas: Resembrando e intercambiando' (RdS) aims to reintroduce local, traditional and farmers' varieties and reclaim the development of public policies to facilitate farmers' rights to conserve, use, exchange and sell their own seeds (Red de Semillas, 2015). In France, Réseau Semences Paysannes (RSP) calls for farmers to 'reappropriate' seeds (Demeulenaere, 2018). In Vietnam, farmers have organised themselves in self-managed seed clubs to produce and

supply seeds, where they produce 'high quality good seeds'- characterised by high seed purity, high seed germination rates, uniformity in growth, and higher yield (Tin et al., 2019).

Farmers' varieties are developed and maintained by farmers, which is usually heterogenous and locally adapted. Modern varieties are developed through formal breeding programs, usually uniform and stable, fertilizer-responsive and exhibit uniformity in characteristics such as size and colour as preferred in commercial crop production. Farmers' preference of modern varieties or local farmers' varieties is determined by many factors, including institutional, environmental, socio-economical and technical factors (Singh and Agrawal. 2019, p. 1371). The farmers of the same region may even alternate between modern and local varieties during different seasons.1 Due to their inbuilt resilient mechanisms and heterogeneity, farmers' varieties are better adapted under marginal and low input environments and play a significant role in food and nutritional security, particularly for small and marginal farmers (Singh and Agrawal, 2019, p. 1371). Thus, farmers in many parts usually prefer locally produced seeds mainly because their characteristics generally respond better to farmers' needs – seed saving, adaptedness to local conditions, low cost, accessibility, diversity of varieties, taste, etc (GNRtFN, 2018, p. 17; Tin et al., 2019, p.17). However, there are no adequate policy measure to support local seed production and innovation.

Recent international and regional policy discourses have shown a shift in the way smallholders and family farmers are seen, 'from being a part of the hunger problem, to now being central to its solution' (Graeub et al., 2016, p.1). Smallholder agriculture shows an impressive productivity and contributes to world food security and nutrition (HLPE, 2013, p.46). Family farms produce at least 53 percent of the world's food. (Graeub et al. 2016, p.1.) A report by the UN High-Level Panel of Experts on Food Security and Nutrition (HLPE) concluded: Historical evidence shows that smallholder agriculture, adequately supported by policy and public investments, has the capacity to contribute effectively to food security, food sovereignty, and substantially and significantly to economic growth, the generation of employment, poverty reduction, the emancipation of neglected and marginalized groups, and the reduction of spatial and socio-economic inequalities. Within an enabling political and institutional environment, it can contribute to sustainable management of biodiversity and other natural resources while preserving cultural heritage.' (HLPE, 2013, p.12). The report further states that the orientation of policies towards large-scale and industrial, rather than small-scale and agrarian agriculture can be attributed to the inability to achieve the first of the Millennium Development Goals, the alleviation of poverty alleviation and the eradication of hunger (HLPE, 2013, p.45). Similar findings were reported in a World Bank Report of 2019 that affirms that increasing smallholder productivity is effective at reducing poverty because it raises the income of the poor directly (Christiaensen and Vandercasteelen, 2019).

Despite the noteworthy capacity of farmers to breed new varieties, the laws promoting plant innovations tend to overlook farmers' breeding. While the International Union for the Protection of New Varieties of Plants (UPOV) Convention does not explicitly restrict individuals from becoming breeders, its requirements for distinct, uniform, and stable varieties make it practically difficult for farmers, whose varieties are often heterogeneous. Additionally, farmers' collective and shared innovation poses challenges in identifying a single breeder, and UPOV-based laws have been shown to negatively impact not only breeding but also seed saving and exchange Braunschweig et al. 2014; Christinck and Tvedt 2015; De Schutter 2011; Haugen 2007; Narasimhan 2008). The International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA), while acknowledging farmers' contributions, tends to view them as providers of raw materials for breeders, rather than enabling their access to new genetic materials for further improvement. While ITPGRFA mentions farmers' role in conservation and sustainable use of PGRFA (Art 5, 6) and promotion of farmers' participation in breeding, no

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1 A classic example is rice in Odisha (India); during summer the area is covered with modern varieties while in autumn and winter, local varieties play important role. Singh and Agrawal 2019 discussing Pandey et al 2012.

substantive rights flow in relation to farmers' access to breeding materials. The UN Declaration on the Rights of Peasants (UNDROP), however, marks significant progress by recognizing farmers' rights to maintain, control, protect, and develop their seeds and traditional knowledge, and obligates states to promote and protect peasant innovations and practices.

In the EuropeanUnion (EU), Farm to fork Strategy affirms that while new innovative techniques, including biotechnology, may play a role in increasing sustainability, sustainable food systems also rely on seed security and diversity, therefore, farmers need to have access to a range of quality seeds for plant varieties adapted to the pressures of climate change (Farm to Fork Strategy 2020, p 10). It seeks to ensure easier market access for traditional and locally adapted varieties (Farm to Fork Strategy 2020, p 10).

Seeds are, however, one of the highly regulated resources. Just the cultivation plantation of seeds requires farmers to comply with certain regulations. If they intend to be involved in plant breeding, they must navigate through the complex web of legal standards which guide steps from accessing breeding material to ensuring market access for the resulting new variety or population. While the piles of laws regulate farmers' relation to seeds, the farmers' involvement in plant breeding would require them access to breeding material, access to market and incentives for continuing innovation.

Access to breeding material

The practice of treating all genetic diversity as raw material for direct use and further improvement is still a norm for farmers in many parts of the world, even where they are involved in more intensive and market-oriented production systems (Salazar et al, 2007, p. 1520). For instance, smallholder farmers deliberately and successfully incorporated a genetically modified (GM), patent-protected trait into popular open-pollinated varieties in the southern Philippines (De Jonge et al, 2021).

Farmer plant breeders select parent materials based on the needs of the farmers, whether of foreign or local origin, if they are not protected by IPRs. Although there are good materials, access to them is not always easy (Tin et al, 2020 p. 26). In some countries, collecting germplasm is made a prerogative of the government, again restricting farmers' access (Ghimire et al, 2021, p. 1017).

The law affecting farmers' access to plant genetic resources (PGRs) can be categorised into (i) IPRs on cultivars, (ii) international Access and Benefit Sharing (ABS) regime (under Nagoya Protocol of CBD and MLS of ITPGRFA), and (iii) plant health regulations (Mulesa and Westengen, 2020).

The number of countries devising IPRs covering breeding materials is increasing. Around 78 countries are members of UPOV[2], and around 60% of the countries in the Global South allow for the patenting of plants or parts thereof (Correa et al., 2020). Such surge in IPRs limits farmers' Freedom to Operate, that is, the freedom to perform a specific action without infringing any enforceable intellectual property rights owned by others (WIPO, 2020, p. 24; De jonge, 2021). Due to the absence of a breeder's exemption[3] in most patent laws,or its very limited margin of maneuver when it exists, the proliferation of plant-related patents is restricting the accessibility of breeding materials for third parties. This reduction in the available gene pool hinders both farmers and breeders from freely accessing the seeds and breeding materials they require (Correa et al., 2020; De Jonge et al., 2021). The number of patents is also likely to increase because of New Genomic Techniques (NGTs) (Brinegar et al., 2017; Kim et al, 2023).

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[2] International Union for the Protection of New Varieties of Plants; See https://www.upov.int/edocs/pubdocs/en/upov_pub_423.pdf (accessed on 05 Sept 2023).
[3] In some European countries, a limited breeder's exemption has been included in patent law. For breeding exemption in patent (Prifti, 2015)

Unlike patent, the UPOV based Plant Variety Protection (PVP) law has breeders' exemption. However, in case of PVP, the question of infringement is decided by whether the characteristics that define a protected variety are present in farmers' variety. Therefore, difficulties arise when the farmers varieties cannot be clearly distinguished from the protected varieties (Christinck and Tvedt, 2015 ,p. 64), or could be rendered Essentially Derived Varieties (EDVs). This puts farmers in vulnerability of prosecution for infringement of PVP rights (Antons et al, 2020).[4]

Furthermore**,** the countries in the Global South have implemented restrictive policies to access PGRs in response to growing enclosure of gene pool by IPRs without economic benefit flowing back, and to protect farmers' varieties from misappropriation (Mulesa and Westengen, 2020). In some countries, for instance in Indonesia, a licence is required to search and collect genetic resources for plant breeding. There was no exemption for smallholder farmers until the constitutional court intervened in 2013 (Ghimire et al. 2021, p. 1019). Thus, an effort to regulate access to PGRs to ensure benefit to farmers could also in turn restrict farmers' access to PGRs for further breeding. Furthermore, access to PGRs through gene banks and farmers from other countries could also be an important source for farmers' breeding. When it comes to accessing the PGRs for breeding, there are two existing international mechanisms: (i) the Nagoya Protocol of the CBD and (ii) the Standard Material Transfer Agreement (SMTA) under the ITPGRFA.

The process of accessing PGR under the Nagoya Protocol is complex (Kamau and Winter 2013). PGRs are accessed more frequently under ITPGRFA. The Ad Hoc Technical Advisory Committee on the Multilateral System and the Standard Material Transfer Agreemen has opinions on the transfer of PGRFAs to farmers for direct use for cultivation, however it is not entirely clear if these PGRS can be used for breeding by farmers (FAO 2015). A study suggests that 'farmers, farmer organisations, and NGOs now comprise a considerable user group of gene bank material, receiving at least 8% of the seed samples distributed from international gene banks in 2015, on par with the proportion distributed to the commercial seed sector.' (Westengen et al 2018). However, there is limited information on whether and to what extent the materials were used for (participatory) breeding by farmers.

Access to market

Seed marketing rules outline the requirements for marketing seed and propagating materials and define how the marketing may be done. In the EU, seed marketing is regulated by twelve species-specific Directives.[5] Many developing countries have modeled their seed marketing laws after European regulations. Seed may be marketed in the EU only if it belongs to a registered variety, and is produced in the seed lot that has been certified, thus making registration of varieties and certification of seed lot, central requirements (Winge, 2015). To qualify for registration, a variety must be demonstrated to be distinct, uniform and stable (DUS). Once a variety is registered in a national catalogue, it is automatically listed in the EU Common

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[4] For instance, A maize farmer was sued by an Indonesian subsidiary of a multinational seed company for allegedly pirating the company's seed. However, a genetic test in the laboratory of the Indonesian Centre for Biodiversity and Biotechnology proved that his seeds were genetically different. Nevertheless, the farmer was imprisoned for ten months for trading uncertified seeds. See (Antons et al, 2020).

[5] Council Directive 66/401 on the marketing of fodder plant seed, OJP 125 11.7.1966, p. 2298; Council Directive 66/402 on cereal seed, OJ 125, 11.7.1966, p. 2309–2319; Council Directive 2002/53 on the common catalogue of agricultural plant species, OJ L 193, 20.7.2002, p. 1–11; Council Directive 2002/54 on beet seed, OJ L 193, 20.7.2002, p. 12–32; Council Directive 2002/55 on vegetable seed, OJ L 193, 20.7.2002, p. 33–59; Council Directive 2002/56 on seed potatoes, OJ L 193, 20.7.2002, p. 60–73; Council Directive 2002/57 on seed of oil and fibre plants, OJ L 193, 20.7.2002, p. 74–97; Council Directive 68/193 on material for the propagation of vine, OJ L 93, 17.4.1968, p. 15–23; Council Directive 1998/56 on propagating material of ornamental plants, OJ L 226, 13.8.1998, p. 16–23; Council Directive 2008/72 on vegetable material other than seed, OJ L 205, 1.8.2008, p. 28–39; Council Directive 2008/90 on fruit propagating material and fruit plants, OJ L 267, 8.10.2008, p. 8–22; and Council Directive 1999/105 on forest reproductive material, OJ L 11, 15.1.2000, p. 17–40. (Batur et al 2021, p. 19).

Catalogue for agricultural species and vegetables, which opens the door to the EU common market (Batur et al, 2021). The certification of seed lots is carried out either by official bodies or under official supervision, and it is mandatory for all seed producers wishing to put their seed on the market (Winge, 2015) In addition, testing for value for cultivation and use (VCU) is done for varieties of agricultural plant species.[6] The EU seed marketing rules apply only to the species expressly listed in the Directives, regulated because of their commercial relevance for the EU (Batur et al, 2021).

There are some derogations which could be used to access the seed market in the EU by farmers: (i) Conservation varieties (vegetable and agricultural crop species) (ii) Varieties with no intrinsic value for commercial crop production (Amateur Varieties, only for vegetables), and (iii) Organic Heterogenous Material. However, the challanges persist.

Reward/Incentive for Innovation

Studies suggest that the existing IPR regimes are inadequate or inappropriate to promote and incentivise in situ conservation or farmers' innovation (Batur and Dedeurwaerdere, 2014; Kochupillai, 2016).The strong property paradigm faces a systematic breakdown in case of mass selection, where innovation often displays a collective nature (Sanderson, 2017). Some farmers in Brittany (France) have been involved in developing and producing their own seeds, and to valorise their work, they tested their own private label or brand. The group of farmers (under RSP) entered into a contract with multinational supermarket chain Carrefour to sell their vegetables produced from semences paysannes at premium prices and with an exclusive label (Rezvani 2020). They continued this for only two years and termed it as an 'experiment'. Later, they concluded, 'It is difficult to struggle against intellectual property rights (IPR) on living organism while developing a brand which itself is a kind of IPR'; instead, it chose to explore the possibility of 'working with the framework of commons' (Diversifood 2019).

Conclusion

Despite the noteworthy capacity of farmers to contribute to plant breeding, existing laws are not favorable to their involvement. Farmers often face difficulties in accessing diverse genetic resources needed for breeding. Market access is similarly constrained by stringent seed marketing laws, modeled after European regulations, which require varieties to meet specific criteria that are often unattainable for farmers' diverse and heterogeneous varieties.

Similarly, the current intellectual property regimes fail to adequately incentivize farmers' innovation and in situ conservation. While some farmers have explored alternative reward systems, such as branding and partnerships with commercial entities, these efforts highlight the inherent conflict between traditional farmers' practices and modern intellectual property frameworks.

While farmers' involvement in plant breeding is essential for achieving food security and conserving agrobiodiversity, the existing legal landscape is not conducive to their innovation. There is an need to update laws to better accommodate and support farmers' contributions to plant breeding.

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[6] Annex 3 of Council Directive 2003/90/EC: Yield; Resistance to harmful organisms; Behaviour with respect to factors in the physical environment,Quality characteristics.

Bibliography

Antons, C., Winarto, Y.T., Prihandiani, A.F. and Uli, S. (2020) 'Farmers as Researchers: Government Regulation of Farmers' Local Knowledge in Indonesia', in Local Knowledge, *Intellectual Property and Agricultural Innovation*, pp. 117–151. Singapore: Springer Singapore.

Batur, F. and Dedeurwaerdere, T. (2014) 'The use of agrobiodiversity for plant improvement and the intellectual property paradigm: institutional fit and legal tools for mass selection, conventional and molecular plant breeding', *Life Sciences*, Society and Policy, 10, p. 14.

Batur, F., Bocci, R. and Bartha, B. (2021) 'Marketing Farmers' Varieties in Europe: Encouraging Pathways with Missing Links for the Recognition and Support of Farmer Seed Systems', *Agronomy*, 11, p. 2159.

Batur, F. (2023) *'EU Seeds Marketing Reform: More room for farmers' rights?'*, presentation, FAO REU Webinar.

Bowler, P.J. (2003) *Evolution: The History of Idea.* 3rd ed. Berkley, Los Angeles, London: University of California Press.

Brinegar, K., Yetisen, A.K., Choi, S., Vallillo, E., Ruiz-Esparza, G.U., Prabhakar, A.M., Khademhosseini, A. and Yun, S.-H. (2017) 'The commercialization of genome-editing technologies', *Critical Reviews in Biotechnology*, 37, pp. 924–932.

Ceccarelli, S. (2012). Landraces: Importance and Use in Breeding and Environmentally Friendly Agronomic Systems. In Maxted, N. (ed.), *Agrobiodiversity conservation: securing the diversity of crop wild relatives and landraces*. CABI.

Christinck, A. and Tvedt, M.W. (2015) *The UPOV Convention, farmers rights and human rights: An integrated assessment of potentially conflicting legal frameworks*. GIZ.

Correa, C.M., Correa, J.I. and De Jonge, B. (2020) 'The status of patenting plants in the Global South', *The Journal of World Intellectual Property*, 23, pp. 121–146.

De Jonge, B., Salazar, R. and Visser, B. (2021) 'How regulatory issues surrounding new breeding technologies can impact smallholder farmer breeding: A case study from the Philippines', *PLANTS, PEOPLE, PLANET*, 4, pp. 96–105.

Demeulenaere, E. (2018) 'Free our seeds!' Strategies of farmers' movements to reappropriate seeds', in Girard, F. and Frison, C. (eds) *The Commons, Plant Breeding and Agricultural Research: Challenges for Food Security and Agrobiodiversity*. London: Routledge.

Desclaux, D. (2020) 'Organic seeds of the future: simple material?', *Organic Agriculture*, 10(1), pp. 23-26.

Diversifood (2019) 'Valorisation Strategies: Shift From Food Labels To Citizens' Responsibility For Commons', *Diversifood Innovation Factsheet* 23, February 2019.

Frison, C. (2018) *Redesigning the Global Seed Commons - Law and Policy for Agrobiodiversity and Food Security*. London: Routledge.

Ghimire, S., Barizah, N., Soeparna, I. and Van der Borght, K. (2021) 'Plant variety protection law and farmers' rights to save, exchange and breed seeds: the case of Indonesia', *Journal of Intellectual Property Law & Practice*, 16, pp. 1013–1025.

GNRtFN (2018) *'Business profits or diverse food systems? Threats to peasant seeds and implications in West Africa'*, GNRtFN, FIAN.

Kamau, E.C. and Winter, G. (2013) *Common Pools of Genetic Resources*. Routledge.

Kim, D., Kock, M.A., Lamping, M., Batista, P.H.D., Hilty, R.M., Slowinski, P.R. and Steinhart, M. (2023) *'New Genomic Techniques and Intellectual Property Law: Challenges and Solutions for the Plant Breeding Sector'*, Research Paper No. 23-16.

Kochupillai, M. (2016) *Promoting Sustainable Innovations in Plant Varieties*. Springer.

Kopytko, N. (2019) 'Supporting Sustainable Innovations: An Examination of India Farmer Agrobiodiversity Conservation', *The Journal of Environment & Development*, 28, pp. 386–411.

Mayr, E. (1982) *The growth of biological thought: Diversity, evolution, and inheritance*. Harvard University Press.

Mooney, P. (2016) 'Commentary: Recommendations: A Way Forward For Agricultural Biodiversity', in *The Future of Food: Seeds of Resilience - A Compendium of Perspectives on Agricultural Biodiversity From Around The World*. Global Alliance for the Future of Food.

Mulesa, T.H. and Westengen, O.T. (2020) 'Against the grain? A historical institutional analysis of access governance of plant genetic resources for food and agriculture in Ethiopia', *The Journal of World Intellectual Property*, 23, pp. 82–120.

Pandey, S., Gauchan, D., Malabayabas, M., Bool-Emerick, M. and Hardy, B. (2013) *Patterns of adoption of improved rice varieties and farm-level impacts in stress-prone rainfed areas in South Asia.* International Rice Research Institute (IRRI).

Peschard, K. (2017) 'Seed wars and farmers' rights: comparative perspectives from Brazil and India', *The Journal of Peasant Studies*, 44, pp. 144–168.

Pistorius, R.J. and van Wijk, J.C.A.C. (1999) *The Exploitation of Plant Genetic Information: Political Strategies in Crop Development.* UA Amsterdam.

Prieler, M. (2022) *'EU reform of seeds marketing rules Which seeds for a just transition to agroecological and sustainable food systems*?', Sarah Wiener and Martin Häusling.

Prifti, V. (2015) The Breeder's Exception to Patent Rights. Springer.

Red de Semillas (2015) 'Spain: The seed network, Resembrando e Intercambiando', in Vernooy, R., Shrestha, P. and Sthapit, B. (eds) *Community seed banks. Origins, evolution and prospects.* Oxon: Routledge.

Rezvani, L. (2020) *'Plants and their peasants: a more-than-human approach to plant breeding and seed politics in Brittany, France'*, (No. 653).

Salazar, R., Louwaars, N.P. and Visser, B. (2007) 'Protecting Farmers' New Varieties: New Approaches to Rights on Collective Innovations in Plant Genetic Resources', *World Development*, 35, pp. 1515–1528.

Sanderson, J. (2017) *Plants, people and practices: the nature and history of the UPOV convention*. Cambridge University Press, New York.

Singh, R.P. and Agrawal, R.C. (2019) 'Farmer's Varieties in India - factors affecting their preferential prevalence and the current status of their legal protection', *Indian Journal of Agricultural Sciences,* 89, pp. 1371–1382.

Tin, H.Q. et al. (2019) *Securing the Local Seed Systems: The Journey of Farmers' Seed Clubs in Vietnam*. SEARICE.

Tin, H.Q. et al. (2020) *'Prospects for Scaling Up Crop Breeding Capacities of Seed Clubs in Vietnam',* SEARICE, October 2020.

Vernooy, R., Shrestha, P. and Sthapit, B. (Eds.) (2015) *Community seed banks: Origins, evolution and prospects*. Routledge.

Wattnem, T. (2016) 'Seed laws, certification and standardization: outlawing informal seed systems in the Global South', *The Journal of Peasant Studies*, 43, pp. 850–867.

Westengen, O.T., Skarbø, K., Mulesa, T.H. and Berg, T. (2018) *'Access to genes: linkages between genebanks and farmers' seed systems*', Food Security, 10, pp. 9–25.

Winge, T. (2015) 'Seed Legislation in Europe and Crop Genetic Diversity', *Sustainable Agriculture Reviews*, vol. 15, pp. 1–64

WIPO (2020) *Identifying Inventions in the Public Domain: A Guide for Inventors and Entrepreneurs.* Geneva: WIPO.

How Farmers Disentangle from Convention and Develop Social and Ecological Objectives in Lincolnshire, UK

— WEINBERG Yonatan

How Farmers Disentangle from Convention and Develop Social and Ecological Objectives in Lincolnshire, UK

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The ecological and social impacts of conventional farming have prompted European policy initiatives to regulate and encourage farming practices. Yet, the ways in which farmers develop their own ecological and social practices are not well understood. Building on practice theory, this study advances a new framework to examine how some conventional farmers develop social and ecological objectives. Employing this framework in Lincolnshire, England revealed three common pathways for the development of new practices. These pathways were modelled to visualize how farming practices transform gradually and cyclically. The model depicts how some farmers disentangle from convention and engage in new objectives on their own terms.

Keywords: regional food systems, entanglement, practice theory.

Introduction

This study examines how farmers change their routines in Lincolnshire, a region where industrial farming practices are conventional (Business Lincolnshire, 2023). The negative environmental and social impacts of such practices have inspired political interventions (Pe'er et al., 2020; Greenpeace Nederland, 2022). Such initiatives, however, are notoriously difficult to implement and contentious to debate (Boztas, 2022; Pronczuk and Moses, 2023). A clearer understanding for how farmers change practices might inform strategies for approaching this sensitive issue. Examining how farmers develop their own social and ecological objectives can inform more effective policy. This study builds on frameworks of practice theory components, and notions of dis/entanglement and dis/engagement, to model how farmers develop social and ecological practices.

Theoretical Background

Practice theory is a body of social theory that examines routinized human behavior as a focus for understanding why and how people do things. Researchers have used practice theory to explain how behavior can both persist and change through recursion. The theorist Anthony Giddens (1984) popularized this recursive nature of practices, as practices are "continually recreated" by the practioners themselves (Giddens, 1984). Schatzki's (1996) three components of practices highlight the fundamental elements that make up practices. The components include:

"(1) ... understandings, for example, of what to say and do; (2) ... explicit rules, principles, precepts and instructions; and (3) ... what I will call 'teleoaffective' structures embracing ends, projects, tasks, purposes, beliefs, emotions and moods (Schatzki, 1996, p. 89)."

These three components are sometimes simplified as *understandings*, *procedures*, and *objectives* (Warde 2005). These are the terms used in this paper.

When a practice is reproduced, it is not always perfect. Each time a practice is performed, its components are subject to some modification. Warde (2005) cites such imperfect recreations as a way in which practices transform. The "sources of changed behaviour lie in the development of practices themselves (Warde 2005)."

Such modification in a practice's components may result in the slow adoption of an entirely new set of practices. As a practitioner reduces their adherence to an established protocol, they often simultaneously adopt another. This incremental process can occur unintentionally and without an actor's complete awareness. The cultural critic Sarah Nuttal (2009) describes this process as an 'entanglement.' Practitioners are "twisted together or entwined" with protocols that can encourage new practices or perspectives to emerge. Those experiencing

this change, unbeknownst, usually retain their old goals and objectives. Therefore, when farmers describe modifying their understandings and procedures, while keeping established objectives, we refer to this as 'dis/entanglement'. Dis/entanglement reflects the often less-than-intentional process for which practitioners stop following some procedures, while adopting others, in pursuit of *established goals*. On the other hand, when farmers describe intentionally adopting new objectives, we refer to this as 'dis/engagement'. These producers deliberately disengage from established procedures, while engaging in others, in pursuit of *new goals*.

Some farmers dis/entangle from practices without dis/engaging from them. Some dis/engage without dis/entangling. Yet others cycle between the two. These pathways are visualized in figure 1.

Trigger ⟶ Understandings   *Dis/entanglement*   Procedure   *Dis/engagement*   Objective
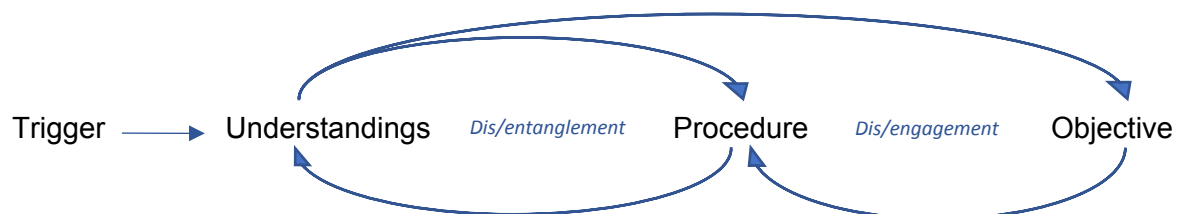
[fig.1] The Dis/entanglement and Dis/engagement model. The dis/entanglement and dis/engagement model consists of several pathways in which farmers move away from established practices and toward a new set of practices. For many, practices start to modify in response to a trigger. Such a trigger induces a practitioner to reexamine their established understandings of a practice. This shift is illustrated with the first blue arrow on the left. A practitioner might then begin to disentangle from their routine by adjusting a procedure, the middle blue arrow from the top. Adhering to a new procedure has the propensity to reveal a new perspective and further entangle a practioner in a new understanding, the bottom left arrow. This new perspective can then advance a deliberate engagement in new objectives, shown by the top arrow. An engagement in new objectives often leads to an engagement in new procedures, the bottom right arrow. The experience of shifting away from previous routines and embracing new practices can be seen as a cyclical process of dis/entanglement and dis/engagement.

Paired with insight on practice components, dis/entanglement and dis/engagement can serve as a framework to analyze how farmers' practices change. This framework can help show how a farmer's understandings and procedures dis/entangle them from/in routines, as well as how understandings and objectives dis/engage them from/in practices. This can help reveal how farmers stumble upon and purposefully embrace changes in practices.

Methodology

To conduct this study, data was gathered through semi-structured interviews and inductive data analysis. Farmers were identified through Google searches and recommendations from other farmers interviewed. The lead author immersed himself in Lincolnshire farming networks and volunteered daily on a Lincolnshire dairy farm in Spring 2023. This experience informed the interview schedule, supported participant observations, and helped identify additional food system actors to engage with. Interview questions focused on the process in which farmers' practices shifted over the span of their careers. Recordings of these interviews were coded for practice components described above. This analysis helped reveal cycles of dis/entanglement and dis/engagement in the farmers' narratives. Pseudonyms were given to the farmers in the study.

Results

Farmers' experience of change followed three general trends we refer to as pathways. These pathways show ways in which farming practices change and transform. Some farmers experienced both dis/entanglement and dis/engagment, while others experienced just one or the other.

Pathway 1 – Dis/entanglement and Dis/engagement

Two farmers in the study expressed undergoing dis/entanglement followed by dis/engagement. The two share similar backgrounds. Geoffrey and Sam both grew up on mid-size 300-500 acre conventional dairy farms. Unfortunately, their inherited farms struggled to profit from sales to conventional, commodity buyers. These financial struggles triggered a shift in the farmers' understandings about marketing. Instead of following their parents and expanding production for the global market, Geoffrey and Sam began exploring new customer bases. These farmers found that branding and certifying their products could give them access to premium markets. Premium markets required adopting new, organic procedures, and linking to regional value chains and customers. As they entangled in new marketing and environmental practices, they began to develop an appreciation for the impact of embedding their business in their regional economies and ecology. They discovered that "social and environmental sustainability are very, very closely linked." Every link in the regional value chain, including the environment, has "got to be nurtured" for all participants to succeed. This appreciation then led to a process of 'dis/engagement' as farmers purposefully shifted their farms away from a profit-mostly orientation towards ecological and social objectives. Geoffrey organized a regional wheat-bread value chain with a local miller, baker, and chef that prioritized environmentally resilient varieties and prices that supported all actors. Sam developed a vegetable box delivery company specializing in organic and environmental shipping practices.
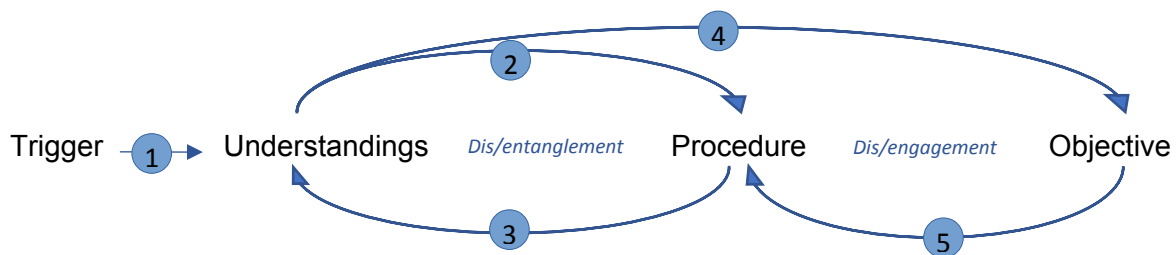
[fig. 2] Sam's Dis/entanglement and Dis/engagement Model. In step 1, Sam recognized that continuing to produce for conventional commodity markets would mean overwhelming competition and decreasing margins. This triggered him to consider other marketing strategies. In step 2, he disentangled from conventional markets and entangled in the organic market. This coincided with an entanglement in organic practices. Sam "got off the tractor," connected physically with the soil, and relinquished chemical control over production. In step 3, Sam followed a change in these procedures with a shift in his understanding about the value of ecology and social sustainability for his success. In step 4, Sam engaged in new objectives to benefit the environment and his coworkers. In step 5, Sam embraced new procedures such as supporting biodiversity and soil health. He also gave employees ownership and democratic control over the company's operations and decisions. After leaving his company, he started a cooperative farm intended to serve a local and regional economy.

Pathway 2 – Dis/engagement

Other farmers described engaging with new objectives without entangling first. Once these farmers developed new understandings, they engaged immediately in new environmental and/or social objectives. These objectives then led to new procedures. For these farmers, unlike for Geoffrey and Sam, the broader impact of new practices were a major reason for adoption. Geoffrey and Sam had to entangle with their new practices first, before they could appreciate their socio-ecological impact.

Elena, for example, described shifting her farming objectives away from her father's focus on increasing scale and efficiency. She wanted to involved her farm in her community and in education. Elena began organizing workshops for kids to visit her 500 acre mixed arable and

animal farm (fig. 3). She also engaged in new marketing procedures. Elena started a local box delivery scheme to increase sales to local customers. She uses less chemicals for the production of this produce and earns more than she would otherwise from conventional markets. Still, a large majority of her farm's produce continues to be sold to conventional commodity markets.

Another farmer, Wilson, also described changing practices by embracing new objectives. An encounter with a regenerative farmer triggered him to consider working with nature, instead of "against it." He adopted 'conservation agriculture' on his 700 acre arable farm. With this, Wilson developed a new objective to engage with natural ecological processes as much as possible. He began prioritizing natural fertilization with climate-adapted, resilient varieties even if that would reduce his yields. By saving on input costs, he would continue to earn a profit anyway. While he adopted many environmental practices, Wilson did not transition to organic cultivation. He terminated each crop in his rotation with chemical herbicide to make way for the next crop. Wilson did not connect his farm with the local economy or community, either. He continued selling to conventional buyers working within global commodity markets.

Kevin, a mixed arable farmer, was encouraged to adopt new objectives after a shift in his perspective, as well. Kevin's age, health, and work experience encouraged a shift in his understanding about intensive conventional farming. He wanted to disengage from its stressful practices. This inspired a new objective to farm on a smaller scale (200 acres) and with less inputs/work. He would do this by engaging in natural ecological processes and new financing schemes. He adopted new procedures to follow the UK government's Environmental Stewardship program offering payments for reduced use of harmful chemicals. Meanwhile, his children returned to the farm and started new local businesses. Kevin's daughter opened a bakery sourcing its wheat from the farm.

Trigger → ① → Understandings → ② → Procedure → *Dis/engagement* → Objective → ③
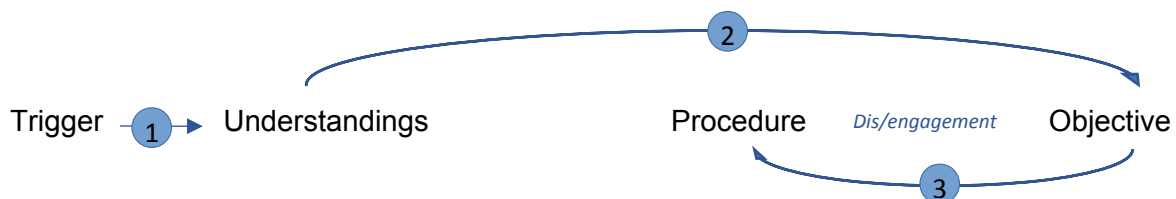
[fig. 3] Elena's Dis/engagement Model. In step 1, Elena is triggered to explore new ways of farming and marketing after witnessing her father's trying approaches to both. In step 2, she engaged in new objectives for the farm to cater to her community and not just the conventional market. In step 3 she developed new procedures of direct marketing to a local economy and educational programming on the farm.

Pathway 3 - Dis/entanglement

Other farmers entangled in new procedures without engaging in new objectives. Like the others in this study, these farmers were first triggered to shift their understandings about a conventional practice. Afterwards they entangled in new procedures in response. Unlike the other farmers, however, they would not go on to embrace new objectives. These farmers believed that new social or environmental objectives would oppose their current goals for increasing yield and profit. So these farmers could not make any big changes, however reluctantly they were about it.

Jack and his family were triggered to consider 'regenerative' arable farming practices to reduce large operating costs. These farmers stopped tilling their soil and entangled in new 'no till' agricultural and business routines. These new procedures helped these farmers achieve established objectives for increasing yields and profits. Unlike Wilson, in Pathway 2, they did not embrace new objectives like a reduction in yield. Unlike the organic farmers in Pathway 1, they did not meaningfully engage in new environmental objectives, either. Jack and his family continued to heavily use herbicides. Continuing these practices and objectives

may have prevented subsequent/radical shifts in understandings, like Geoffrey and Sam had experienced that led to their new approaches to farming.

Hank also disentangled from conventional agriculture practices by reducing tillage on his arable farm (fig. 4). However, unlike Jack, Hank expressed an appreciation for environmental resilience on his arable farm. This appreciation did not translate into a new objective, however. A focus on resilience could reduce yields which would prevent him from reaching his financial objectives. After all, not every farmer can "afford to be principled" as "a lot of farmers are tied to the treadmill... of having to produce and having to pay the bills." Sacrificing yields presented an unacceptable financial risk and presented "an unfortunate side effect that principles can be sacrificed."

Dave also entangled in new procedures without engaging in new objectives. Dave was triggered to increase his production after receiving an offer from a new buyer. This led him to triple the size of his potato farming operation to 7500 acres, resulting in new procedures. Some of these procedures were inspired by new understandings about the role that "birds and the bees" play in increasing production. Dave added new crops in his rotation and reserved areas for wildlife to improve natural soil fertility and pollination. Yet, just like the other two farmers in Pathway 3, Dave did not want to reduce his yields. He did not want to completely eliminate chemical input use or go organic. He did not undergo a resulting change in understandings or objectives. Dave continued to primarily raise profits by increasing production to conventional markets.
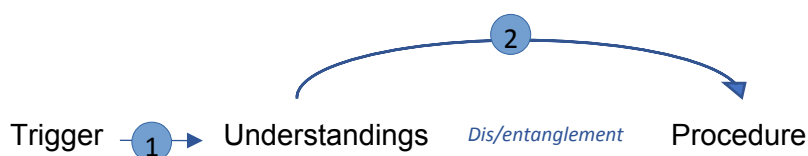
[fig. 4] Hank's Dis/entanglement Model. In step 1, Hank developed new understandings about the ecological benefits of reducing tillage on his farm. In step 2, this resulted in disentangling from tillage routines and entangling in new procedures like limiting cultivation and adding biodiversity. In step 3, Hank described developing an understanding for the ecological resilience on his farm. Yet, unlike some other farmers, he did not feel capable to fully engage in new objectives for resilience due to the financial risks of lower yields.

No change

The only farmers interviewed who did not experience a significant change in practices were the Franks. This father and son duo working on 3000 acres of arable crops did not express any trigger to shift their understandings. Nor did they express any process of dis/entangling or dis/engaging. They experienced struggles to remain viable, but they did not reevaluate their perspective on how to finance their business. Their understandings remained the same: "Our prices are governed by market forces generally, world market forces." So they continued their farming practices as is.

Discussion

These three pathways represent three common trends in which farmers in this study changed practices. Each of these pathways are associated with a different degree of engagement in regional and ecological food systems. Farmers in the first pathway engaged their farms almost entirely in regional value chains and organic practices. Most farmers in the second pathway engaged a fraction of their production in regional value chains and low chemical input regimes. Farmers in the third pathway entangled in new environmental practices but did not engage in regional value chains nor regimes of low chemical input use.

These divergences can be attributed to the degree to which financial and socio-ecological objectives were perceived as dependent and mutually reinforcing. Farmers in Pathway 1, entangled in regional value chains and rigorous organic practices to increase profits, at first.

By the time they began engaging in socio-ecological objectives, a large part of their farm and business already depended on regional economies and ecological practices for financial survival. These farmers therefore viewed financial objectives and viability as mutually supportive of their socio-ecological objectives. Farmers who experienced the second pathway of transformation did not entangle first in regional value chains or organic practices. When they engaged in socio-ecological objectives, their farms did not depend on these factors to succeed. Regional value chains and ecological practices were perceived as nice values to embrace but not necessary for viability. Consequently, regional and low input produce represented a relatively small portion of their production. Farmers in the third category actively viewed ecological practices, and to some degree regional value chains, as opposing their financial objectives. Their farms depended on increasing production which could be threatened by low chemical input regimes. Therefore these farmers felt that they could not fully engage in socio-ecological objectives.

The farmers in the first category developed profitable farms with lower rates of production and chemical input use than they had had previously. These farmers managed this by embracing higher value markets and selling more directly to customers. Many of the farmers in the second category also embraced these marketing tactics. Farmers in the third category felt that they could not reduce their production, however. These farmers expressed skepticism for the organic market and felt that the size of their farm was too large to engage in regional value chains or direct sales. Therefore to support socio-ecological farming movements and practices, policymakers and planners can support regional value chains and high value markets that incentivize low chemical input use for small and mid-size farmers.

Conclusion

The framework and model advanced by this study are useful tools for uncovering the process in which farming practices change. Examining how experiences shape and shift practice components provides a systematic method to study practice transformation. This study revealed three general pathways in which conventional farmers developed social and ecological objectives for their farms. The farmers who engaged the most in socio-ecological objectives were those that entangled in regional value chains and organic practices for financial reasons before engaging with them more intentionally. These farmers perceived financial objectives and socio-ecological objectives as mutually reinforcing. Therefore, to encourage socio-ecological food movements, policymakers and planners can support high value markets and regional value chains that incentivize organic and low chemical input use practices.

Bibliography

Boztas, S. (2022) ''Emotion and pain' as Dutch farmers fight back against huge cuts to livestock', *The Guardian,* 21 July. Available at: https://www.theguardian.com/environment/2022/jul/21/emotion-and-pain-as-dutch-farmers-fight-back-against-huge-cuts-to-livestock (Accessed: September 2ⁿᵈ, 2023).

Business Lincolnshire (2023) *Agriculture and Horticulture Overview.* Available at: https://www.businesslincolnshire.com/industry-support/agriculture-and-horticulture/agriculture-and-horticulture-overview/ (Accessed: 22 May 2023).

Giddens, A. (1984) *The Constitution of Society: Outline of the Theory of Structuration*. Berkeley: University of California Press.

Greenpeace Nederland (2022) *Brief aan minister over Perspectief voor toekomstbestendige landbouw en boeren.* Available at: https://www.greenpeace.org/nl/natuur/53648/brief-aan-minister-over-perspectief-voor- toekomstbestendige-landbouw-en-boeren/ (Accessed 9 June 2023).

Nuttall, S. (2009) *Entanglement: Literary and cultural reflections on post-apartheid*. Johannesburg: Wits University Press.

Pe'er, G. *et al.* (2020) 'Action needed for the EU Common Agricultural Policy to address sustainability challenges', *People and Nature,* 2, pp. 305–316.

Pronczuk, M. and Moses, C. (2023) 'Labeled Climate Culprits, European Farmers Rebel Over New Standards', *The New York Times,* 28 Aug. Available at: https://www.nytimes.com/2023/08/26/world/europe/europe-farmers-climate-change.html (Accessed: 10 June 2023).

Schatzki, T.R. (1996) *Social practices: a Wittgensteinian approach to human activity and the social.* Cambridge University Press.

Warde, A. (2005) 'Consumption and Theories of Practice', *Journal of Consumer Culture,* 5, pp. 131–153.

PAPER SESSION 4.C
FROM INFORMAL
TO FORMAL
URBAN AGRICULTURE

Reviving the educational garden – unfolding an ambiguous pathway for political recognition

— **CARSTENSEN Trine Agervig**

"Reviving the educational garden – unfolding an ambiguous pathway for political recognition"

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Educational gardens have, historically, been an important part of urban agriculture. Countless elementary school pupils have gained knowledge and experience with cultivating practices, ecological understanding and food literacy, and their vegetal produces have played a role in many household economies, not least during times of scarcity.

Today, such cultivating activities do no longer form part of the formal school curriculum and many school gardens have been converted into other functions. However, small enclaves of school gardens have survived around the world and preserved a unique pedagogical and didactic knowledge base built over the years. Regardless of a predominantly fragile organizational framework based on few dedicated grassroots, the school garden is a persistent, tangible, and self-evident phenomenon that attracts attention and support from both civil society and politicians. Hence, it has a huge potential for upscaling. This paper draws on a single case study of the revival and transformation of a large, hundred-year-old educational garden in Copenhagen, Denmark, and unfolds the ambiguous pathway of balancing between autonomy, self-determination, stability and predictability.

Firstly, it outlines how the garden, after decades of decay and political unawareness, recently was revitalized and transformed into place-based node supported by an association that also enabled the revitalization of other survived school gardens in the city – and by that made it possible to provide more children the experience of growing, of nature contact and of taking home their own produce.

Secondly, the study analyzes the embedded values that have guided the important steps behind the transformation from an informal, voluntary-based and autonomous organization to today's formalized organization, integrated into the city administration and with people on the pay roll.

Eventually, the paper sheds light on the challenges of the school garden association's ambiguous strategy for, on the one hand, preserving the qualities that follows an informal movement while on the other hand acknowledging a continuous need for investing efforts that may ensure educational gardens progressively embedding in urban and educational policies, including how to balance efforts invested in internal core activities vis-à-vis strategic activities in partnerships with external stakeholders.

Keywords: school garden, values, formal, informal, organization, curricula

1. Introduction

Due to a long and worldwide tradition for educational gardens, countless elementary school pupils have gained knowledge and experience with cultivating practices, ecological understanding and food literacy, and their vegetal produces have played a role in many household economies, not least during times of scarcity. In its heydays did school gardens form part of the school curriculum, but today growing activities have been reduced to voluntary-based leisure activities providing fewer children the possibilities to experience the joy of growing, nature contact and of taking home their own vegetal produce. However, now there are signs that educational gardens have started to regain terrain as a wider phenomenon, ranging from short-term outdoor teaching to longer processes in "green classroom" gardens.

A reason for this revival is an urge for making the young generation knowledgeable about the dependency on nature and ecological processes. This guides the foci of present education, for instance outdoor learning, learning in nature, food literacy, climate adaptation, natural cycles, etc. Hence, a shift from having educational gardens of leisure to necessity can be observed (Espinosa Seguí et al., 2017).

When turned into a leisure time activity the school garden became a fragile organization. The approach and values of school garden grassroots vis-à-vis the public authorities' present barriers for collaboration and revitalisation. In nowaday's ecological crises all contributions to the green transition are important. Hence, there is a need for upscaling

educational gardens and for understanding the ways informal food movements and policy collaborate in successful way, for paving a way forward.

The aim of this paper is to understand what it takes nourish the luring school garden seeds which have diminished but been preserved in small enclaves around in urban areas. The paper draws on a single case study of the revival and transformation of a large, hundred-year-old educational garden in Copenhagen, Denmark. After years of being a reduced to leisure time offer for the city's children, school teaching activities re-started in 2008 and are today financed by the municipality. The paper investigates the development of strategies for ensuring the goals and values of the school gardens in this organisational change. This is done by unfolding a pathway which balance between on the one hand, preserving the benefits from being an autonomous and self-organised movement and, on the other hand, exploiting the predictability and stability following being integrated and underpinned by the city administration.

2. Background

The school garden movement was a pedagogical-didactic movement which gained terrain especially during the 19th and 20th centuries and it was widespread in the global North (Desmond et al, 2002). On European ground Germany and France were frontrunners an drew on the groundbreaking thoughts of Rousseau about "the child and the nature" and on Froebel's ideas about how gardens could cultivate the child in "Kindergartens". The first compulsory school system with gardens was developed in Prussia back in 1811 and turned into law in 1869.

Besides from their pedagogical and didactic contributions, school gardens have historically played a role in many household economies, not least during times of scarcity. Only few enclaves of school gardens have survived, and these may be nourished by today's revitalization of educational gardens related to the current crises of biodiversity, climate change, foodscapes, etc.

In Denmark the heydays of school gardens started in 1903 when schoolteacher P.W. Lindholm, was sent out by the Danish Government to learn about the phenomenon and to bring back knowledge, especially from Germany. On his return he founded "The Danish School Garden Association". In the following decades school gardens spread to all urban areas in Denmark. When new schools were built, they had school gardens, and these were managed by paid schoolteachers. In 1940 there were 34 school gardens in the capital city, Copenhagen.

From around 1960 new themes began overtaking the school curriculum and many gardens were given up. However, some school gardens continued due to dedicated school garden teachers. They volunteered in preserving what they saw as meaningful practices, and they also saw a need for this. As a predominantly agricultural country Denmark had undergone a rapid process of industrialization, which had detached the majority of the population from cultivating experience and knowledge.

Some gardens did also survive as a matter of their formal status. The school gardens in Lersøeparken in Copenhagen, was established in 1923 six km from the city centre on land unattractive for urban development at that time. The land was segregated into six school gardens belonging to the schools in the district. During the 1960s, when the school garden cause declined and the pressure on land-use increased, three of the gardens disappeared and the plot shrank into half the size. In the late 1960s the land was protected as part of a national conservation effort for city parks, and it has been dedicated school gardens ever since.

The surviving three school gardens were used only for leisure time gardening activities and coordination of these, which once were paid, had now turned into merely voluntary work. The coordinating teachers would receive a small fee per child from the municipality, hardly enough to run the gardens. Their dedication was long lasting. In Lersøeparken two of the gardens were organised by the same teachers for 25 respectively 37 years. When they stopped one year apart, a generational change was needed if the school gardens were to survive.

3. Methods and data

This paper draws on data collected through a single case study of the Lersøeparken School Garden (LSG) and the related association Copenhagen School Gardens' Association (CSGA). This includes a literature review, qualitative interviews, guided tours and site observations at different times of the year. Data also contain a range of unstructured talks with people with school garden experience as children.

The in-depth interviews of 1,5-2 hours were conducted in Autumn 2023 with an educational gardener in LSG, and with the coordinator of LSG, who is also head of the CSGA board. The focus of the interviews was the life of the garden, its products, services and results, as well as the garden's external relations and the political framework conditions. The respondents provide an inside perspective on LSG/CSGA that unfolds how they have preserved their autonomy.

4. Results

The present coordinator of LSG was a schoolteacher student when she in 2003 started as a volunteer in Lersøeparken. She had some horticulture experience and became soon the coordinator of one of the three garden with good support from the other school garden managers and their accumulated knowledge and experience.

One of the gardens was developing a new service targeting kindergarten activities, supported by a small public grant. This marks the beginning of a new era of the gardens. School teachers heard about the kindergarten service and inquired for teaching services targeting pre-school pupils, and soon also older pupils. The experienced old coordinators had the capacity to provide for up to 200 children a week and could not meet all inquiries for new garden services themselves. Thus, the present coordinator also started receiving school classes in her part of the garden, which also triggered a fee per child, just like leisure time service. The demand was great, and from 2007 and on the garden work she supported her economically.

In 2008, she also got involved in a project creating a "Food Literacy Catalogue" in which the practices and ideas guiding school gardens formed important contributions. The project was funded by the Municipality of Copenhagen and ensures the employment of two people for two years.These fundings kick-starts a longitudinal innovative work for developing a pedagogical-didactic framework for multi-level school class programmes focusing on providing each student a plot of land for learning to cultivate, to enjoy outdoor living and to get connected to nature.

Lersøeparken School Garden (LSG)

The LSG of today consists of the three gardens joined as one. The area is 3 HA of which 1 HA is cultivated without the use of pesticides. Winter crops are milled down before seeding to release all the nutrients the plants have absorbed to the soil. The water costs tripled under the 2018-draught and the garden strive to be self-supplying. They have reduced the water consumption by streamlined the irrigation system and exploit the opportunities for rainwater collection. The site has three buildings with office, meeting rooms, facilities for the permanent staff and volunteers and for winter class teaching.

The services

Each year 25.000 children benefit from the gardens' services, and these have expanded over the years. The school class teaching programmes are the core activities in CSCA, but also leisure time gardening and visiting programmes for kindergartens are offered and a programme for children with special needs is currently under development. The comprehensive summer classes imply 3,5 hours/week during the growing season (April to October) and the learning outcomes follows growing rhythms. Also 4 hours winter classes are offered. These can be about bread baking and crops; the transition from hunter-gatherer society to agriculture; the importance of food and storage techniques for migration.

The programmes for the 3–6-year-old children centres around food literacy and nature contact. They were developed because the school class experience indicated a need to take action at an earlier stage. If only few children in a class know a bit about nature this shows to have positive cooperative learning impacts to the class.

Teaching material is another continuously developed service. It highlights learning objectives and displays how gardening activities makes the specific school subjects relevant (e.g., history, mathematics, science & technology). These efforts have been compiled in a 188-page long teaching compendium "Urbane Skolehaver" (2017), which is available on CSGA's website. A Catalogue on Winter School Garden teaching is also offered. The schoolteachers value such teaching materials as they are easy to tap into. They may also request more tailormade teaching programmes, and such can be developed by emailing back and forth with educational gardeners about learning objectives.

The educational gardeners make a point of staying up to date on the state-of-the-art scientific knowledge from research on sustainability, outdoor schools, children-nature didactics, etc. Hence, teaching programmes are profoundly informed by scientific data and empirical knowledge forms.

Copenhagen School Gardens' Association (CSGA)

While school class programmes were developing in LSC, a network with other six small surviving school gardens in the city was formed. Due to LSG size and facilities, it became the node of the city's school gardens. In 2011 Copenhagen School Gardens' Association (CSGA) was established. It plays a core role both in the school gardens' internal organization and in the the transformation from informal and formal organization. The objective of the association is "*to move the school garden cause and related tasks*" (Statutes, § 1, own translation), which covers a two-fold expansion strategy towards more class teaching and more garden territory. The association CSGA is led by a board elected for a two-year period and each of the school gardens have a member. The association is signed by the chairperson and the cashier. The board prepares regulations and an annual plan for the school gardens, which are presented at the annual general assembly. Board meetings are held twice a year outside the busy growing season.

The coordinator of the LSG, who is also chairing the CSGA board, organizes the work in LSG and across all the school gardens. Although the coordinator has the final say, the LSG is formed by a team of self-driven employees which all have a foot in both the horticultural and educational sector. Along with their teaching tasks they have specific areas of responsibility, e.g., the gardening work and maintenance, the irrigation system, the daycare area, and identification of vacant land to start new CSGA gardens. The number of staff has grown over the years, and it varies over the seasons. Four full-time staff and 12 part-time staff are on the payroll in LSG all year, and in the summertime, there are up to 25 part-time staff and 20 volunteers.

The coordinator meets regularly with the staff in the CSGA gardens. Meetings for experience sharing, which often implies garden visits are important and can be initiated by anyone in the association:

> "If they come up with some exciting themes and cases in the Islands Brygge [school garden] we all go out there to hear what they've come up with, and then you'll be deeply inspired. Speaking of innovation, we may be separate islands, but we're constantly talking to each other. Something may well arise in one place, and on the other island they say, 'Hey, we can use that for something over here'". (Coordinator of LSG)

Furthermore, has CSGA created a network of volunteers, who meet and share experience related the leisure time gardening programme.

Partnerships

The maintenance and outbuild of partnerships at many scales forms part of the strategy for meeting the goal of expansion the school garden cause. Many of these are based on the staffs' personal networks.

> *"We are the kind of people who come with something in our luggage... and who have seen that if we are to ensure that the children have a future, then we have to have this thing running. So there is an ideological background for being here as well. It's not the kind of job where you walk in and say, "Hello, please tell what I should do". (educational gardener).*

The LSG enjoys goodwill in the local area, including from the Local Council, which writes positive stories in the local newspaper and announces LSG's open garden events, e.g., the annual Harvest Party. It receives many visits from stakeholder groups and also many spontaneous visits from citizens and former school gardeners.

The formal organization
In the transformation from an informal to a formal organization funding plays a core role. The first grants were short-termed and small, but gradually larger and longer funding have been obtained. The first larger grant of 1.5 million DKK/year covered the period 2010-2013 ensured the first permanent employments. Today the LSG receives a permanent annual grant of 1.8 million DKK from the municipal budget which have enabled the expansion of employees and activities and most of the gardens have permanent staff today.

Formally speaking, the CSGA is defined as a public-law administrative body, that is subject to the national Public Administration Act. It ranks under the City of Copenhagen's administrative Department for Children and Youth and the sub-section for "Sustainable Development"., In practice, however, CGSA and LSG have a high degree of self-governance as any other NGOs. The annual grant is received independently of how many children receive their services. This allows them to organize their work in ways where they can provide for as many children as possible and still innovate their teaching activities. They submit annual key figures and qualitative evaluations of their practice. Once a year, the coordinator meets with the head of "Sustainable Development" section for evaluation.

An important part of CSGA's promotion of the school garden cause, happens through relationships, because, as the coordinator explains, *"cultivating a garden is cultivating relationships."* School gardens form part of the municipality's current "Action plan for green folk school" (2022), but person-based political attention is considered equally important. Hence, municipal politicians and other authorities are often invited to the garden to experience their practices and surroundings, and such persistent lobbying has ensured the development. Especially the Lord Mayors have showed to be supportive. When the previous Lord Mayor (Frank Jensen 2010-2020) ran for election, he visited the garden and proclaimed that "all children in the city should have a school garden". Also, the current Lord Mayor (Sophie Hæstorp Andersen 2020-), supports the school gardens and used them in her profiling when she was running for election.

5. Discussion
Self-determination is an important value motivating the engagement of the school gardeners. Although they may have been on the pay roll for long time, they still identify themselves as volunteers, and their joy of work depends on having a relatively autonomous working environment.

> *"We are volunteers who love gardening, not meetings […] High educated - poorly paid, but you sleep well at night. And that's important".(education gardener)*

Self-determination is also important for being able to attract the volunteers, indispensable to the services of the gardens. In order to move the school garden cause and expand the number of gardens a certain degree of institutionalization and formalization have been seen as needed.

> *"The association's starting point has always been: It costs something to make something of quality. Those who believes that we can just do it all voluntarily to make it continue – not here. […] If you are going to carry on it has to become some kind of institution. The school gardens cannot live on air alone. They have to have some money... And that's how have succeeded."* (Coordinator of LSG)

Turning the CSGA into a formal association has followed an pathway with many ambivalences involved in the efforts of balancing the values of self-determination and autonomy vis-à-vis predictability and stability. The organizational transformation has strived to harvest the best from both worlds. This balanced in-between position allows them, on the one hand, to bypass the municipality's costly procedures and to use their own networks for e.g., for cheaper and tailormade construction work. On the other hand, do steady finances allow for allocating efforts to the core activities and innovation instead of spending time funding strategies.

An important strategy has been to allocate resources for cultivation relationships with the city's decision makers on the highest political level, the Lord Mayors. They have been successful as lobbyists and such skills continue to be important as city's politicians are elected every 4 years, thus continuous political attention is crucial to maintain predictability, stability and the annual fixed grant.

Cultivating the values of openness and inclusion have been another strategy of the CSGA, for instance by strived to offer service to as many children as possible. Half a century ago did one school garden field in LSG only serve one school class. Today the same field is serves four school classes, while still offering a considerable produce. Such efficiency efforts are needed as the demand CSGA's garden services exceeds the supply. In 2018 there were 34 school classes and 3.000 children on the waiting list.

In the LSG they are aware about the location on public parkland. They feel obliged to open up and share the site with the local community and wider civil society as they benefit from these partnerships in terms of stability and goodwill. The Copenhagen's Lord Mayor (2006-2010), Ritt Bjerregaard, who herself had a school garden as a child, coined the united public and economic values of the garden site, when stating:

> *""It's indeed a bit of a paradise you have here. From an economic point of view, you have a lot of land here". […] I think the meaning was "there is great potential here" […] because Ritt knew well that it was protected. …The point was that it has a huge public value. We have taken it upon ourselves. We feel a great responsibility to ensure that as many children and adults as possible have access to the area".* (Coordinator of LSG)

Thus, the LSG strives to be an open garden which all citizens should be able to visit when they like. However, openness also creates vulnerability, and after some episodes of vandalism, the garden is today fenced off and the gates only open during hours of teaching activities.

Actions have also been taken for preserving the core values of self-determination, while being a body under administrative law exposed to public management's framework and targets. The CSGA has sought to minimize administrative requirements, e.g., by ensuring the minimal adaption to the administration's evaluation formats while still obtaining evaluation parameters defined in meaningful ways. This strategy has ensured an efficient balancing of resource allocation in accordance with core tasks.

School gardens often are located on public land and the issue of protection is key to mitigate the pressure on the land-use in urban areas. The LSG is 100 % protected today but used to be twice the size before land plots were re-allocated for daycare and elderly housing. Other CGSA gardens are only partly or little protected and can be turned into other public land-

uses, e.g., allotment gardens, climate adaptation. A surviving school garden nearby the Lykkebo school, was closed down in some years ago when the area was converted into a Sustainable Urban Drainage System (SUDS). It took seven years to establish a new school garden nearby the Islands Brygge school and the pathway was full of land-use obstacles. A range of other purposes were competing for occupying the vacant public land lot. Thus, compromises were needed, which reduced land size wanted, but in 2016 the school garden finally succeeded.

To move the school garden cause and expand it on the ground, which is a slow and time-consuming process, it is important to have good relations with administration and politicians, as there are many interests at stake. There are a range of threads present. In the slow processes the support can diminish. Hence, continuous lobby efforts and maintenance of relations are needed. In CSGA's statutes, §14, it is ensured that if the association is dissolved, the financial resources must be passed on to other associations or foundations same or similar goals as CSGA.

6. Concluding remarks

This paper has unfolded a pathway for revitalizing school gardens in the shift from being an informal self-determining organization to a formal and stabilized organization. School gardens are unique "green classrooms" allowing for place-based and transdisciplinary learning objectives, e.g., food literacy and understanding of nature, crucial to the green transition. The demand for school gardens in Copenhagen exceeds the current supply. Hence, there exists huge potential for upscaling and a growing awareness of school gardens' potential occurs in both civil society and in policy and administration.

The Copenhagen School Garden Association prioritizes to provide their services to as many children as possible and its resources for outward strategic work is limited. Thus, the CSGA concentrate on nourishing the relations to the decision makers key to the funding and the stability of the gardens. The CGSA's teaching programmes and services are closely aligned with currently growing didactic reorientations that link practice and nature-based learning activities to the curriculum of nature, environment and food, underpinned by pedagogical and didactic research (see e.g., Schilhab, 2021).

As an important step school gardens have reentered the education agenda in the city of Copenhagen. They can also be found locally in other strategic municipal documents about urban nature, sustainability and climate adaptation. Nonetheless, for unlocking the upscaling potentials it is needed enhance the awareness towards school gardens' cross-cutting benefits and to transgress the policy compartmentalizing. Similarly, national partnerships could be further exploited. For instance, by joining forces with the NGO "Gardens for bellies" (Dyg & Wistoft, 2018), the national dissemination node for culinary-focused school gardens whose aim is that all municipalities in Denmark have school gardens by 2030.

Indeed, local educational policies are valuable steps forward, but school garden teaching can only be proliferated if it reenters the national curricula. Here and evidence-based research and evaluations could play an important role. However, a crucial to support the upscaling would also be to reach the level of education policy through national and international alliances. This would include tapping into current EU-level strategies and available policy instruments.

Bibliography

Beery, T., Fridberg, M., Præstholm, S., Uhnger Wünsche, T., & Bølling, M. (2024). Connectedness to nature: a tale of three scales. *Environmental Education Research*, 1–23. https://doi.org/10.1080/13504622.2024.2320342

Blair, D. (2009): The Child in the Garden: An Evaluative Review of the Benefits of School Gardening. *The Journal of Environmental Education*, 40:2, 15-38.

Corrochano, D. Ferrari, E.; López-Luengo, M.A.; Ortega-Quevedo, V. (2022): Educational Gardens and Climate Change Educatioon: An Analysis of Spanish Preservice Teachers' Perceptions. *Educ. Sci.*, 12, 275.

City of Copenhagen (2002): *Handleplan for grøn folkeskole* [Action plan for green elementary school], Department of Children and Youth. https://bedstsammen.kk.dk/sites/default/files/2023-02/Handleplan%20for%20gr%C3%B8n%20folkeskole-a.pdf

Desmond, D.; Grieshop, J., Subramaniam, A. (2002): *Revisiting Garden Based Learning in Basic Education*. IIEP/FAO/UNESCO, Rome, Paris. https://www.fao.org/fileadmin/templates/ERP/2013/link_Virtual_pub/GBL_paper_for_SD.pdf

Dyg, P.M. & Wistoft, K. (2018). Wellbeing in school gardens – the case of the Gardens for Bellies food and environmental education program. *Environmental Education Research* , 24:8, 1177-1191.

Espinosa Seguí, A.; Maćkiewicz, B., Rosol, M. (2017): From Leisure to Necessity: Urban Allotments in Alicante Province, Spain, in Times of Crisis, *ACME* 16(2): 276-304. https://rua.ua.es/dspace/handle/10045/68788

Schilhab, T. (2021): Nature Experience in Science Education in School: Review Featuring Learning Gains, Investments, Costs in view of Embodied Cognition. *Front. Educ., Educational Psychology*. Vol 6 .2021. https://doi.org/10.3389/feduc.2021.739408

Grey areas and green spaces: revealing the conflicts and gaps in the formalisation process of urban agriculture in Bogotá

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Grey areas and green spaces: revealing the conflicts and gaps in the formalisation process of urban agriculture in Bogotá.

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ABSTRACT - In Bogotá, Colombia, urban agriculture started as a spontaneous activity practiced by residents in the poorest areas of the city. Over the years, the socio-economic changes affecting the country as well as many other areas in Latin America have amplified and diversified this phenomenon. In 2023, urban gardens in Bogotá were reported to be more than 7,000.

Although institutional programmes in support of urban farming in Bogotá date back to 2004 and the local Botanical Garden was appointed to their management in 2015, the modalities and spaces of urban farming in the city still maintain a strongly informal character, and farmers often occupy land to grow food without official permission. Local authorities are willing to embrace UA's bottom-up and informal character to benefit from the impacts of this practice, although with inconsistent approaches. For example, they encourage the practice but they fall short of providing the infrastructures and land necessary to implement or sustain these gardens.

This article examines the stories of 15 urban gardens in Bogotá that were collected in 2022 as part of a doctoral investigation. It analyses the stance and perspective of two main actors (local authorities and farmers) when these gardens enter a process of top-down recognition. It also analyses the influence that such dynamics bear on the character of the built environment in this city. One of the findings is that urban gardens often arise from the desire of citizens to improve the society in which they live. This often stems from dissatisfaction with institutions and the state in general. Yet this dissatisfaction does not always manifest itself as a protest but rather as an attempt to build an alternative socio-physical context.

Keywords: informal urban agriculture; Latin America; urban gardens

Introduction

Bogotá, Colombia's capital, has recently attracted international interest for its cutting-edge sustainable development programmes, which led to its recognition in 2022 as FAO "Tree City of the World" for the second year in a row. Although there are no national policies focusing on urban agriculture (Graeme, 2014), since 2004 the municipality of Bogotá has been steadily implementing initiatives promoting this practice (Hernández-García & Caquimbo-Salazar, 2018).

A map of the city with more than 2,000 urban gardens was recently published (Galeno Sánchez, 2023), showing that these gardens are distributed across the entire administrative boundaries. The municipality uses a contentious metrics (*estrato social*, i.e. the social stratum) to classify neighbourhoods on a scale from one to five (with one being the worst) the quality of the built environment, which is supposed to reflect the socio-economic conditions of their inhabitants (Rueda-García, 2003). Using this metrics to read the map, urban gardens are found in informal areas (low social stratum) as well as in medium and high stratum neighbourhoods. This suggests that urban agriculture is practiced by a wide range of socio-economic groups, presumably motivated by different reasons. In other words, the map suggests a transition from a condition in which urban agriculture addresses subsistence to one in which it is used to generate mainly social benefits.

Another important condition characterising the landscape of urban agriculture in Bogota' is that, regardless of the stratum of the neighbourhood in which they are located, urban gardens have often no formal recognition. Although some face eviction, local authorities seem rather lenient and encourage such a practice while at the same time avoiding resolving issues of land ownership and land access because too difficult to address. Against this backdrop, it is perhaps

ironic that a formal institution, the Botanical Garden of Bogota, has been put in charge to implement such programmes to support a predominantly informal urban agriculture.

This contradictory context provides an opportunity to observe tensions between different stakeholders, their interplay, and possibilities that arise. It is a context in transition in which informal initiatives are at the same time contested and accepted within. Based on a doctoral investigation in Bogota' documenting the potential of this city's urban gardens to produce food and social benefits, this article firstly outlines the context and the policies impacting urban agriculture; secondly, outlines the profile of a sample of gardens studied in this investigation to finally elaborate on tensions and synergies between actors, hence providing a picture of how informal and formal spheres influence each other in Bogota'.

Context: history and policies

Over the course of the last 60 years, endemic terrorism and poverty triggered a migration of people from rural to urban areas (Gómez-Lee & Burq, 2018). Migrants settled in informal neighbourhoods at the outskirts of Bogota' (Cantor Marin, 2009) and significantly contributed to its growth. A 2014 FAO report maintains that urban agriculture was first practiced by these informal settlers. The municipality acknowledged this trend and took action in 2004, when urban agriculture was officially included within the policy *"Bogotá sin hambre"*. Within it, under the supervision of the Botanical Garden José Celestino Mutis, the programme *"Agricultura Urbana: Sostenibilidad ambiental sin indiferencia para Bogotá"* started. It featured an array of initiatives to teach citizens about self-sustenance through urban food growing, while at the same time supporting existing networks of urban farmers (Hernández-García & Caquimbo-Salazar, 2018). The project was a success and was renewed under the following programmes *"Bogotá bien alimentada"* and *"Bogotá te nutre"* (Gómez Rodriguez, 2014; Hernández-García & Caquimbo-Salazar, 2018). To date, in implementing these programmes, the Bogotá Botanical Garden pursues the following four aims: investigative (study of local plants), formative (capacity building for the management of community gardens), technical (promoting techniques for water recycling and soil fertility), and social (improving the social fabric) (Gómez Rodriguez, 2014).

Bogotá's current layout has been shaped by different planning policies throughout the twentieth century. The *Plan de Ordenamiento Territorial*, or POT, is a collection of spatial planning guidelines that was first introduced in Bogotá in the year 2000 (Rada Betancourt, 2016) and subsequently revised in 2021. Although the 2000 version of this document contains various articles that elaborate on the contribution of public green spaces to the urban ecosystem and their role within the main ecological structure (EEP-estructura ecologica principal) (Jardín Botánico de Bogotá José Celestino Mutis, 2021), urban agriculture is only mentioned with regards to eco-tourism (Rada Betancourt, 2016). However, the 2021 revision of the POT prescribes urban agriculture for various purposes including improved urban ecology, and connectivity between urban and rural areas. It recommends to practice it close to natural water bodies and in public space, and recognises its contribution to climate change mitigation. In 2020 the municipality declared a three-month window in which gardens initiated in public spaces could legalise their status. It must be noted that these are local policies that are not reflected at a national level.

Despite this positive picture, there are still very few areas within the city that are equipped for farming. Likewise, despite the legitimisation of existing community gardens in the city's parks, there is no provision of land to implement future projects. Programmes for urban agriculture implemented by the Botanical Garden aim to support the existing gardens rather than consolidate and expand. All this suggests that the municipality is grappling with the challenge of formalising a bottom-up movement that is still essentially informal in character.

Investigating urban agriculture in Bogotà

As part of a doctoral investigation aimed at identifying the food productivity and the social benefits generated by urban gardens in Bogota', data were collected from 15 case studies over 5 months, starting from January 2022. A questionnaire completed by 74 respondents, including garden managers and volunteers, observation sessions, and consultation with experts provided qualitative data that have been used to understand patterns of interaction between urban gardens and municipal institutions within the broader socio-political context.

The 15 case studies are reported in Appendix 1, with details on type of project, surface area cultivated and stratum of their location. Four recurrent types were identified by analysing the database of the Botanical Garden and through fieldwork: a) home gardens (food grown for self-consumption); b) community gardens (food grown for the residents/volunteers and for socialising); c) educational gardens (food grown exclusively to support the food education of students); and d) productive gardens (food grown and sold for profit). It is worth noting that home gardens are registered in the Botanical Garden database, hence considered an important component of the urban agriculture dimension of the city. Home gardeners are willing to be part of this network and are receiving – if required – technical and practical support by the Botanical Garden. Home gardens are rarely an area of investigation within the urban agriculture debate of the Global North. Bogota' shows that they are a critical component not only because they increase the household's food security but also because they substantially contribute to expand the web of gardeners and help reach a critical mass. Overall, the informal character of the gardens manifests in their hybrid features, with some home garden – for example - being partly built on roofs or terraces adjacent to the dwellings and yet reachable by all, hence practically public (see Fig. 1). Qualitative data have been elaborated and organised; these reported into thematic sections that capture the patterns of formal/informal interaction mentioned above.

Figure 1 – Home garden with no clear boundaries.

Interaction between urban gardens and institutions

As mentioned above, data collected helped reconstruct some recurrent patterns of interaction between urban gardens and the muncipal institutions. These are reported below.

Recognition. Urban agriculture in Bogotà. is such a vast and complex phenomenon that the city authorities are willing to embrace its bottom-up and informal character in order to benefit from the positive contributions of this practice. The handling of public assets and infrastructures in Colombian cities is entrusted to entities that operate at a local, regional, or territorial scale. This means that a lack of coordination between these levels could result in the creation of grey areas in the management and legal aspects of Bogota's public sector. The manager of one of the gardens interviewed mentioned how this constituted an issue for those urban gardens that

were created in spaces where different infrastructures overlap, such as green areas under high-tension pylons or near canalisation systems. In these cases, it is difficult to establish who is the administrative body to contact for the legal recognition of the urban garden, which remains in a bureaucratic limbo.

Although - to an extent - gardens established on public spaces seem to be recognised by authorities, such gardens that have been built on land that belongs to other entities are still struggling. This is the case of CS11, created in the premises of a "quebrada", i.e. a river canyon, for self-subsistence and environmental protection purposes, which is now subject of dispute between its owner and the water authorities of Bogotá (see fig. 2). Furthermore, the municipality still struggles to coordinate the multitude of networks of urban gardens in the city, as remarked by many of the garden managers who expressed the desire to be connected to other groups of urban farmers that operate in other neighbourhoods. Although the Botanical Garden frequently organises events aimed at disseminating information on urban agriculture and connecting networks of urban farmers, it is clear that these have a limited impact.

Figure 2 – CS11 occupying a sensitive ecological area (river canyon)

Opposition – Not all gardens are willing to engage with the municipal programmes. Puente Aranda district, in 2021, was the scene of major protests against a tax reform proposed by the then government. Protesters, a large share of whom were young students, organized demonstrations and public debate meetings in the districts' public parks. Many of the community gardens in Puente Aranda grew out of these demonstrations, as shown by the young age of many case studies from this area. 2 community gardens stated that they would not affiliate with the programme promoted by the Botanical Garden because they disagreed with its agenda. One of these gardens is a prime example of how urban agriculture is used as a form of political protest: many signs in this garden extol food sovereignty (e.g., "Somos abundancia"-"We are abundance"), while others denote a strong dissent with the authorities (e.g., "No nos callaran"-"We will not be silenced"). The name of this garden (which uses a word that means sun in the Muisca language), its layout to accommodate assemblies, and the use of native species of plants indicate how its creators are in a position of strong disagreement with the current institutional powers and pursue an alternative social order. This garden is not an isolated case but is part of a collective called *"Huerto Circuitos"* ("garden" sounds like "short" in Spanish, hence "short/garden circuit") a pun that identifies Puente Aranda's network of gardens, while alluding to a short-circuit, which in this context can be connected to the purpose of generating disruption..

However, the local authorities do not seem to react with particular hostility to the dissenting demonstrations of the gardens in question and other gardens. This stance could be motivated by the desire to de-escalate the social turmoil that gave rise to the 2021 riots that is still simmering in these spaces. It is possible that the Bogota authorities prefer to show tolerance towards minor acts of rebellion in order to prevent these from escalating into more substantial acts of protest if repressed. In this case. This situation bears similarities to what was observed

by Pudup (2008) in her investigation of the use of community gardens to create compliant citizen subjects.

Several urban farmers expressed the need for more wholistic programmes that would support them beyond technical and organizational aspects and would provide them with tools to be economically viable or become food enterprises. During an informal meeting, an official of the Botanical Garden confirmed that it is common for many urban gardens to seek to commercialise their product once they begin to produce a surplus of food that could be monetized. Although the Botanical Garden has created various initiatives to encourage the entrepreneurial development of Bogotà's urban gardens, such as farmers' markets, the comments reported above suggest that these support actions are still not completely effective.

Beautification - The literature on urban agriculture in Bogotá often mentions how this is used aesthetically and symbolically in informal settlements by rural migrants to manifest their cultural identity and mark their territory. These characteristics can be seen in CS10, which is a stronghold for the "AltoFucha" community. Conversely to CS10, which is located close to the Andean forest in the south-eastern hills in an area of great natural and scenic value, the other case studies in informal contexts are located in densely urbanised areas, with fewer available spaces for cultivation. Here too urban agriculture can be used to improve the aesthetic qualities of the built environment in the less green areas of the city.

As already mentioned, community gardens occupy parts of public parks with the aim of creating meeting points for the communities that use them, along with the desire to improve the spaces they occupy. If we measure the cultivated areas of these spaces, they are small in size. This might give the false impression that the size of this type of garden is insufficient to accommodate group activities, but this is not the case. Community gardens are not delimited as they squat a small portion of a large public space, typically a park. This makes it impossible to estimate their actual size, as cultivated beds are often far apart, sometimes interspersed with elements of the formal built environment (as in the case of CS5, CS6 and CS8). Furthermore, since some of the activities involve large groups of people, it is reasonable to assume that some spaces are deliberately left empty to allow groups of people to gather without trampling on the flowerbeds, hence spilling out beyond the supposed boundaries of the gardens.

The occupation of land in public parks is contentious although rarely ends with evictions. This may be because public parks have no substantial strategic or economic value for the municipality. In this sense, the case of CS10, which has been involved in a constant diatribe with the municipality of Bogotá over illegal land occupation, is emblematic. In this case, unlike the other community gardens, the "AltoFucha" community is actively being opposed by the municipality who wants to acquire the land it occupies to create a luxury residential area.

This kind of attitude brings to mind what observed by McClintock (2018), who remarked how urban agriculture can be used as a placeholder by municipalities while waiting for certain urban areas to become attractive for further construction investments. The motto of the CS10 community is, in fact, *"En riesgo AltoFucha" ("AltoFucha at risk")*. At present, urban agriculture in Bogotá is underpinned by institutions that seem to truly appreciate the multiple benefits this practice can bring. But learning about CS10's story, we cannot help but wonder, who will be the next at risk?

Overall, as the long list of gardens willing to be registered with the Botanical Garden demonstrates, their attitude towards formal powers is rather non-conflictual. Gardeners are enthusiastically leveraging the power of plants to improve the place where they live and to enjoy the benefits that socialising while gardening generates. They are creating social innovation and the authorities are - to an extent - facilitating this process, although perhaps pursuing different finalities.

Conclusions

Bogota' is a city that thoroughly embraces and supports urban agriculture. Perhaps this is a consequence of its history together with other socio-cultural factors that are difficult to identify. Regardless of the root causes, considering the scale and ambition of current urban agriculture practice and polices, Bogota' represents a rare opportunity to observe the interplay between grassroots movements - claiming access to land, support and recognition - and the authorities, in a very particular situation, one in which movements reach the critical mass that can influence policymaking. The existence of 7000 surveyed urban gardens – and probably many more that have not been identified in the database of the Botanical Garden - and the relentless action of individuals and groups informally occupying land to grow food without formal permission, must have driven the decision of the municipality to invest in support programmes. But such a support falls short of formalising the right to a long-term use of the land and the creation of new urban gardens. It also does not resolve the mistrust towards authorities that manifests itself in the refusal of some urban gardens to be recognised by the Botanical Garden.

In reconstructing the relationships between the urban gardens and the municipality, three patterns were identified. We have called them: recognition, opposition and beautification. These patterns are not the only ones manifesting and they are not specific to this city only, but rather they constitute dynamics that happen in any context albeit in different conditions. The last one, for example, can be compared to the motivations underpinning the movement of Guerilla Gardening and – to an extent – Incredible Edible Todmorden. In Bogota', this trend is linked to the desire of improving the quality of the built environment particularly in informal areas that lack public spaces and infrastructures, a situation perceived as a failure of the authorities to provide homes and basic services, resulting in a neglected public realm. The beautification of informal areas through nature provides further evidence that growing food in cities does not only increase food security at a household and community level but it is also a tool that can be used by local communities to improve the quality of their places. This hands-on urbanism - as defined by Markman & Krazny (2013) - has transformational potential and is capable of giving an identity to places that is generated by the residents. Considering this perspective, the urban gardeners' dissatisfaction does not always result in protest and opposition but also in a constructive engagement with the institutions. This is demonstrated by the willingness of possibly the majority of the city's gardens to be recognised by the Botanical Garden and engage in activities that this institution organises. Interviews with farmers suggest that the informal nature of their gardens is not understood as a deviation from the norm (i.e. the formal), but rather as an alternative, a different path to be undertaken in the construction of relationships, households, communities, neighbourhoods, and cities.

Bibliography

Cantor Marin, K. M. (2010). Agricultura urbana: elementos valorativos sobre su sostenibilidad. Cuadernos de Desarrollo Rural, 7(65), 14.

FAO. (2014). Urban and Peri-urban agriculture in Latin America and the Caribbean : Compendium of case studies.http://www.fao.org/ag/agp/greenercities/pdf/compendium.pdf

Galeno Sanchez, M. A. (2023). Directorio de huertas urbanas y periurbanas_Bogot. D.C. 2023.

Gomez Rodriguez, J. N. (2014). Agricultura urbana en America Latina y Colombia: perspectivas y elementos agronomicos diferenciadores [Bachelor's degree]. Universidad Nacional Abierta Y A Distancia.

Gomez-Lee, M. I., & Burq, L. (2018). Santa Rosa siembra un sistema alimentario sano y sostenible en Bogot.. Alimentar

Las Ciudades. Territorios, Actosres, Relaciones, June 2018, 211–250. https://doi.org/10.2307/j.ctv1ddctfb.10

Graeme, T. (2014). Growing greener cities in Latin America and the Caribbean.

Hernandez-Garcia, J., & Caquimbo-Salazar, S. (2018). Urban Agriculture in Bogoa'.'s informal settlements. In J. Zeunert & T. Waterman (Eds.), Routledge Handbook of Landscape and Food (pp. 329–343). Routledge. https://doi.org/10.4324/9781315647692-23

Markman, M., & Krasny, E. (2013). Hands-On Urbanism 1850–2012: The Right to Green.

McClintock, N. (2018). Cultivating (a) Sustainability Capital: Urban Agriculture, Ecogentrification, and the Uneven Valorization of Social Reproduction. Annals of the American Association of Geographers, 108(2), 579–590. https://doi.org/10.1080/24694452.2017.1365582

Pudup, M. B. (2008). It takes a garden: Cultivating citizen-subjects in organized garden projects. Geoforum, 39(3),1228–1240. https://doi.org/10.1016/j.geoforum.2007.06.012

Rada Betancourt, B. A. (2016). Bases para la reestructuracion del programa de agricultura urbana y periurbana agroecologica en Bogot. D.C., con base en los lineamientos dados en el acuerdo 605 del 27 de agosto de 2015. Universidad Distrital Francisco Jos. De Caldas.

Rueda-Garcia, N. (2003). The case of Bogota D.C., Colombia. In Universidad de Los Andes. https://doi.org/10.4324/9781315131153-1

Appendix 1

Description of 15 case studies in Bogota'

Code	Surface area	Type	Technique	Description	Stratum
CS1	250m^2	productive garden	two hydroponiv frames and one mushroom farm	located within a market where crops harvested are sold	medium-high stratum
CS2	27m^2	home garden	raised beds, planters and vases	on the terrace of a residential house	high stratum
CS3	24m^2	educational garden	planters and vases	rooftop of an industrial building. Under threat of eviction although supported by the Botanical Garden	medium stratum
CS4	47m^2	home Garden	crops grown in containers, raised beds and in-soil	on the terrace of a residential house	medium stratum
CS5	14m^2	community garden	in-soil	in a public park	In between two areas of medium and low stratum
CS6	168m^2	community garden	in-soil	In a public park. Low food productivity but strong socio-political role. Exposes boards with slogans aganst sauthorities.	medium stratum
CS7	258m^2	hybrid home garden / collective garden	in-soil	collective garden, on residual land that had to be terraced	low stratum
CS8	25m^2	community garden	in-soil	In a public park. It is a stronghold of opposition against the development planned by the owner of that land	medium stratum
CS9	91m^2	educational garden	planters and raised beds	next to a carwash in a poor neighbourhood. It offers workshops to students in a university nearby.	low stratum
CS10	25m^2	community gardens	planters and raised beds	organises workshops on women's rights, gender-based violence, the promotion of constructive individual expression among the youth, etc.	low stratum
CS11	1450m^2	home garden/productive garden	in-soil	part of the garden is on an environmentally sensitive, protected land. Water authorities are threatening eviction	low stratum

CS12	50m^2	community garden	raised beds	It benefits from training by the Botanical Garden and support from the municipality that found a space to start it. This was possible because the municipality provides community halls and spaces on public land to JACs (community action boards)	medium stratum
CS13	744m^2	productive garden	in-soil	The Botanical Garden provided training and now they are mentioned in their programme "*Mujeres que reverdecen*" (women who thrive again), in which women from vulnerable social groups work in urban farms to learn skills to emancipate themselves	low stratum
CS14	1250m^2	productive garden	in-soil	included in agroecological routes created by the Botanical Garden to encourage ecotourism and knowledge about more sustainable lifestyles	in between two areas of medium and low stratum
CS15	331m^2	educational garden	raised beds	functioning as a node for the consolidation of local social networks and the protection of the young from the influences of gangs	low stratum

PAPER SESSION 4.D
TRAINING AND
POLICY
LEARNING

New Actors in Food Governance. The Potential role of Museums and Ecomuseums

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— KOCH Pamela
— AZZARITO Laura
— MURA Giulia
— ADDIS Ginevra

New Actors in Food Governance. The Potential role of Museums and Ecomuseums

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Abstract

The main aim of this paper is to explore urban food co-governance, or hybrid governance processes (Manganelli, 2022), by examining the contribution of some actors in making them more inclusive, sustainable, and able to stimulate learning and capacity building processes. Andrée (2019) underscores a crucial aspect in the discourse on urban food governance: the imperative for enhanced integration within the various facets of food-related responsibilities in central governments. This entails fostering a discussions regarding the contributions and the roles of diverse food system actors, from businesses to civil society organizations.

Our research hypothesis is that museums and ecomuseums can be an entity that, while not directly involved in food policies, can contribute to food co-governance practices to the extent that they employ learning and capacity building tools that engage the local community or national and international visitors.

The role of museums today is changing. From dusty repositories of ancient artefacts deemed important by a handful of scholars, museums have become 'social agents', capable not only of assuming social responsibility but also of catalysing change through capacity building. This idea is an evolution and active expression of the school of thought known as 'New Museology', which emerged in the 1960s and 1970s. New Museology focused on how museums could support disadvantaged communities and stimulate processes of social, cultural, and environmental change.

As is well known, according to the latest ICOM definition of 2022, a museum is "a not-for-profit, permanent institution in the service of society that researches, collects, conserves, interprets and exhibits tangible and intangible heritage. Open to the public, accessible and inclusive, museums foster diversity and sustainability. They operate and communicate ethically, professionally and with the participation of communities, offering varied experiences for education, enjoyment, reflection, and knowledge sharing" (ICOM, 2022).

Ecomuseums are a type of museum that extends 'beyond the walls' of a traditional museum, to encompass the ecosystem of the surrounding territory, including its tangible and intangible cultural and natural assets, and the local population. Conceived as an on-going process of becoming, it has been defined by Peter Davis as: "a community-based museum or heritage project that supports sustainable development (Davis 2007: 116).

To achieve the objective and discuss the hypothesis outlined above, the paper is structured as follows: the first paragraph defines the theoretical framework. The second paragraph describes more in details what museums and ecomuseums are. The third section presents some case of special interests from various countries. The final section returns to the hypothesis proposed at the beginning and draws final conclusions.

Keywords: Food, Governance, Museums, Ecomuseums

The co-governance perspectives: the role of learning process and capacity building

The main objective of this section is to propose a theoretical reflection on the current orientations of food system governance. Governance of the food system, as well as governance in a more general sense, is oriented towards the adoption of collaborative governance approaches. The concept of co-governance has been defined as the joint work of

multiple actors to achieve common goals (Kooiman, 2004). Johnston and Andrée (2019) identify other useful definitions for this analysis, such as the one promoted by Emerson et al. (2012) that describe co-governance as a collaborative, voluntary and public policy process engaging "people constructively across the boundaries of public agencies, levels of government, and/or the public, private and civic spheres in order to carry out a public purpose that could not otherwise be accomplished" (2012). In these approaches the construction of relations both between the actors of a given territory and with the territory itself become decisive.

The issues briefly outlined above find ample support in the literature, which states that governance encompasses a broad spectrum of relationships, processes, rules, practices, and structures, both institutional and discursive, serving as the conduits through which power, control, and decisions are orchestrated. It extends beyond the confines of the state and its affiliated agencies, recognizing the formal and informal roles played by a diverse array of actors in the intricate web of policy-making processes. Unlike the concept of "government," which is characterized by a rather narrow focus, the concept of governance acknowledges the inherent multiplicity of actors and perspectives in public decision-making structures, prompting a critical examination of these structures and their implications. Civil society organizations, akin to governments, actively engage as agents in public policymaking, social provisioning, and discursive interventions. In a democratic context, the concept of governance is normatively anchored in the belief that enhanced participation from non-governmental actors, such as the private sector and civil society organizations, is not only beneficial but also desirable. The premise is that through broad-based participation, governance processes can surpass the effectiveness of governments acting in isolation, leading to the attainment of shared, public objectives (Healey, 2017), especially evident in contemporary rescaling processes (Brenner, 2001), decentralization and a 'hollowing out of the nation state '(Jessop, 2013).

The vision of place governance outlined above found a moment of great development and focus with the institutionalist approach. This approach was supported by the Newcastle upon Tyne School, which defined governance as the capacity of territories to act, ultimately conceptualizing governance capacity as institutional capacity (Healey, 1999).

Institutional capacity (Cars and Healey, 2017) refers to the ability of territories to establish fruitful and constructive pathways of action, to enhance the physical resources of places and to foster continuous reflexive dialogue between territorial actors. This process lead to the construction of new discourses about the places themselves and to transformation efforts (Habermas, 1987).

In this sense, territorial governance is a learning process that implies the maturation of new capacities for action and for the formation of new networks. These governance 'capacities' have also been recognised by scholars of food system governance who, without explicitly citing the institutionalist school, believe that "in a growing number of cities around the world, local government officials and non-state actors are designing and actively implementing policies, plans and strategies for more equitable and sustainable urban food systems. The involvement of non-state actors (such as farmers, private businesses, civil society and community groups, academics, the media, etc.) in food policy is a hallmark of the shift from top-down government to governance in public management that has taken place in many parts of the world" (Stoker 2000 in Halliday, 2022)

Museums and Ecomuseums in Action for Sustainability

The International Council of Museums (ICOM)'s official website affirms, "The definition of a museum has evolved, in line with societal developments." Since its creation in 1946, ICOM has updated this definition to reflect the realities of the global museum community.
Previously, ICOM defined museums as "a non-profit, permanent institution in the service of society and its development, open to the public, which acquires, conserves, researches, communicates and exhibits the tangible and intangible heritage of humanity and its environment for education, study and enjoyment" (ICOM, 2007, p.9).

The Extraordinary General Assembly of ICOM approved the new museum definition in Prague on 24th August 2022. According to the new definition, "A museum is a not-for-profit, permanent institution in the service of society that researches, collects, conserves, interprets and exhibits tangible and intangible heritage. Open to the public, accessible and inclusive, museums foster diversity and sustainability. They operate and communicate ethically, professionally and with the participation of communities, offering varied experiences for education, enjoyment, reflection and knowledge sharing" (ICOM, 2022).

As Bennet (2005) underlines, the significance of museums extends beyond mere repositories of artifacts, in fact, they have played a pivotal role in shaping social spaces and organizing temporal structures. Their influence extends beyond the confines of the museum itself; museums have played a pivotal role in establishing the spatial and temporal frameworks that support programs of social administration conducted outside their premises. Bennet (2005), drawing a parallel with Latour's assertion in the article titled 'Give me a laboratory and I will raise the world' (Latour, 1983), wrote: 'Give me a museum, and I will change society'. This perspective acknowledges the museum's unique capacity to engineer new entities by manipulating the relationships between people and objects within a purposefully designed environment. These entities can then be mobilized, both within and outside the museum, to contribute to diverse social and civic programs.

An ecomuseum is "a community-based museum or heritage project that supports sustainable development" (Borrelli and Davis, 2012). The notion of ecomuseum was firstly introduced in the 1960s and from the 1970s the concept has evolved over time. It can be stated that the origins of ecomuseums can be traced back to the Lurs Conference in 1966. The conference introduced the idea that French parks did not have only the role to preserve the natural part of the park but also its cultural heritage (Borrelli, Dal Santo, Davis, 2023, p.286). Between 1971 and 1974 the ecomuseum became an institution focused on community development and new ecomuseums were introduced (Borrelli, Dal Santo, Davis, 2023). Today, ecomuseums have become a relevant notion in "New Museology" (Borrelli and Davis, 2012), playing a role as a social actor in the transformation of the territory and its community. The primary function of ecomuseums is to safeguard and promote local socio-cultural traditions. This is facilitated by the preservation and revitalization of collective memory, deeply rooted in the cultural and historical heritage of the region. To sustain their pivotal role, ecomuseums usually conduct comprehensive research and scholarly inquiry into the thematic aspects of the territory. Furthermore, the conservation efforts undertaken by ecomuseums are predominantly oriented towards sustainability, thereby fostering tourism development through the judicious valorization of the local landscape.

As previously mentioned, heritage is one of the key elements considered in the notion of "ecomuseum", as it is strongly connected to the development of self-awareness and identity of the community involved. Another key factor that should be considered is the notion of "sense of place". The sense of place is highly interconnected with human interaction as it is created by natural and cultural elements (Borrelli and Davis, 2012). The sense of place involves the development of "a set of structures and habitual ways of understanding inherent to a society or group" (Borrelli and Davis, 2012), known as "habitus". However, habitus is not static, it evolves over time in relation to different factors such as relationships, environments and education. Ecomuseums need to focus on these aspects, as they play a significant role in creating a deep connection between people and territory. Such connection is tightly linked to the presence of territorial governance systems that facilitate "capacity building" (Borrelli and Davis, 2012), as this process empowers stakeholders by enhancing their skills and involvement in decision-making processes. This governance aspect is crucial because it extends beyond state politics, involving a broader range of actors. By developing practices of democratic territorial governance, ecomuseums introduce and foster a sense of responsible behavior within both local stakeholders and individuals.

As far as sustainability is concerned, ecomuseums need to be involved with SDGs. The Sustainable Development Goals (SDGs) were introduced in 2015, when it was assessed that

the previous framework, the Millennium Development Goals (MDGs), had failed its purpose. The SDGs are 17 goals introduced in the Agenda 2030 in order to create a collaboration between different sectors to address and fight the many challenges existing all over the world. Along these lines, Peter Davis introduced the "21 Principles", specifically developed for ecomuseums, in order to give a guideline to evaluate the collaboration of ecomuseums with sustainable development (Borrelli, Dal Santo, Davis, 2023). According to the vision proposed by the 21 Principles, ecomuseums are strongly focused on the involvement of the community and decision-making processes, two aspects also found in the Agenda 2030. Furthermore, ecomuseums promote collaboration between different actors, such as schools and the community, in order to bring culture and the territory together. Finally, as far as sustainable development is concerned, ecomuseums play a necessary role of promotion of a sustainable approach to the territory, creating opportunities for the community to acknowledge global issues and to act upon them. It is therefore possible to affirm that, through the implementation of initiatives aimed at the stimulation of active participation within the community, thanks to digital innovation and to a bottom-up approach, ecomuseums can affect the future of the territory and its community.

Some Practices Around the World

Many scholars remind us that the food system is far from sustainable because much of the power is in the hands of food and agricultural input companies, while farm workers and consumers do not hold enough power (United States Department of Agriculture, 2022). Finding new ways of communicating the relevance of a sustainable food system can support the growing awareness of these marginalized stakeholders to advocate for a change in food systems and empower their ability to modify their own food choices.

The ability of museums to become places of knowledge transfer and dialogue is expressed in different contexts: there are national and international museum projects that have focused on sustainability, climate change, and in some cases even food. All these projects promote and discuss how to raise the awareness of both local society and international visitors, and how best to achieve sustainability goals. Moreover, it is important to mention that in 2020 ICOM (International Committee for Museums) has launched a new working group on sustainability, dedicated to the discussion of actions that could be carried out to support the achievement of the Sustainable Developments Goals (SDGs)[1]

As presented by Hjalager and Wahlberg (2014), museums can also become strategic partners for the involvement of users into regional food innovation processes. They can serve as experiential and participatory spaces where it's possible to build solutions for regional challenges, and forge collaborations with other actors of the system, such as academia, food producers, restaurants, local and tourism organizations.

An Italian interesting project called "The integrated Museum" develop the relationship between museums and sustainability. This experience aims at making museums key players in the local implementation of national and regional sustainable development strategies (Rota, 2019). Specifically, in the context of the implementation of the Italian National Sustainable Development Strategy – NSDS[2], the Integrated Museums intend to: create a place for comparison, exchange of good practices and in-depth study on sustainable development issues; actively integrate with urban, metropolitan and territorial agendas for local development; promote the function of museums as civic and cultural platforms that operate in close relation with entities and citizens in a logic of a "diffuse museum"; create a cultural ecosystem dedicated to museology for sustainability; produce a guideline document to be signed, which articulates the themes on which museums can contribute to the construction of

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[1] For more information looks at Working Group on Sustainability - International Council of Museums - International Council of Museums (icom.museum).

[2] The NSDS/SNSvS represents the political framework to implement the 2030 Agenda and its SDGs in Italy. highlights-italy-action-plan-pcsd.pdf (oecd.org)

policy and their strategic role in key processes on the territory and as facilitators in local sustainable development; open a dialogue and convergence with the themes of the National Forum for Sustainable Development and the sustainability indicators of the NSDS (Rota, 2019).

Another interesting project is the Food Museums network in the province of Parma, which intends to be a place of memory and a monument to past generations, but also a theatre of today, capable of illustrating and demonstrating the value of products that are the protagonists of Italian gastronomy and the Mediterranean Diet. The aim of this network of museums is to remind current and future generations of the relevance of protecting local food (Musei del Cibo, 2023). Still in Europe, on the shores of Lake Geneva in Swiss Vevey, there is another interesting example: Alimentarium is a museum devoted exclusively to food and nutrition, which includes a large educational vegetable garden (Alimentarium, 2023).

In Washington D.C. Jacobson is developing a National Food Museum for the United States. Such a museum will include a physical museum, a richly informative website, and community activities. The museum aims to be connected at local level with community-based activity and at global level organizing activities addressed to visitors and extensively utilizing social media platforms.

Other interesting examples are the Climate Museums. As Newell (2020) illustrates, there are at least 5 Museums in the world that have been opened over the last few years and that have the specific objective of proposing initiatives on climate change and raising the level of awareness of these issues both on a local and global scale. The museums in question are those in New York, Rio, Hong Kong, Oslo and Bremerhaven (Germany). As Newell well reminds us, these are museums inspired by the "new museology" and therefore much devoted to participation, with an approach that is not only didactic, but above all dialogical. Their aim is to stimulate forms of active listening on the part of the interlocutors that allow them not only to hear, but to "feel" with all their senses the importance and gravity of the current climate situation. In addition to these museums, which were created precisely with the aim of opening up a debate on climate change, it is important to remember that some important museums have organized exhibitions, including permanent ones, that deal with this theme. Some examples, again reported by Newell (2020), are the exhibition at the Smithsonian National Museum of Natural History; that of the American Museum of Natural History; that of the Australian Museum; the National Museum of Australia; and the Papa Tongarewa/National Museum of New Zealand. The central issue we wish to highlight, beyond the different initiatives, is that Museums can become important vehicles for communicating sustainability messages to both the local community and visitors. Both these communities can approach these issues using different languages and forms of communication.

A last example of food related exhibition is the one that opened on 15 September 2022 in the City of New York Museum, whose title is "Food in New York: bigger than the plate" and whose objective is precisely to explore the different phases of the food system and how they can be changed to become more sustainable.

Coming to the experiences developed by ecomuseums, according to Zago "the themes of ecomuseums related to food culture are the most diverse" (Zago, 2018, p. 199, author's translation): in Italy there are ecomuseums dedicated to a specific agricultural product, or traditional agricultural processing. In general, ecomuseums promote all local features, as "in enhancement and promotion activities, the territory must be considered in its entirety, as a place of knowing how to live and knowing how to produce" (Zago, 2018, p. 195, author's translation), so food is part of this local development system. Ecomuseums are also able to create networks, such as the "Eco Slow Road" project, which was promoted during Expo 2015 from a collaboration between Italian Ecomuseum Network (EMI), Slow Food Italy and the Ecomuseum Acque del Gemonese. As well as creating a network for the promotion of ecomuseums with a wide agri-food heritage, the project aimed to enhance little-known geographical areas, supporting the preservation of traditional culture as a resource to develop

a sustainable model of tourism. Another important network related to food is the "Ecomusei del gusto"[3], aimed in ecomuseums promotion based on local food and wine enhancement.

Two virtuous ecomuseums that works with food are Ecomuseo Lagorai in Trentino Alto Adige, and LIS Aganis, Ecomuseo delle Dolomiti Friulane in Friuli-Venezia-Giulia. Ecomuseo Lagorai is located in a territory where numerous traditional "malghe" produce cheese with a local traditional methodology. "Malghe" are typical pastureland in the Italian Eastern Alps, and to some extent in the Central Alps, where animals, especially cattle, graze during the summer. It also refers to the buildings, or complexes of buildings, constructed from wood or a combination of wood and masonry, situated on these pasturelands. These structures are used for housing livestock, storing milk and tools, and providing temporary accommodation for staff. In the "malghe" of the ecomuseum is safeguarded traditional butter and cheese making, which is a Slow Food presidio (conservation label). The ecomuseum created Youtube videos where these traditional cheese making techniques are narrated and disseminated.

At Lis Aganis ecomuseum food is enhanced in different ways and with different activities. One of them is the "ancient apples project", an itinerary of ancient apple trees accompanied by educational panels; it aims in recovery, safeguard and promotion of old apple trees, in collaboration with the Association Ancient Apples Lovers. The ecomuseum have also working tables called "Nature and Colours" specifically dedicated to the recovery and rediscovery of local natural plants for local development and to strengthen territorial bonds. The ecomuseum organized meetings (also online during the Pandemic) with different topics (such as traditional recipes, biodiversity, tastings) where local community is actively involved in sharing and learning about local products. The ecomuseums organized periodic meetings around food as cultural heritage (traditions, food and art, recipes, laboratories, seminars and conversations) in collaboration with local associations and stakeholders.

The experiences of Ecomuseo Lis Aganis and Ecomuseo Lagorai demonstrate that local development is achieved by the collaboration between stakeholders for fostering local identities and networking (Zago, 2018, p. 195): in that case the transmission of food and its promotion are a way for local identity promotion.

Conclusions

In light of the discourse developed so far, in this last section we will mainly reflect on the innovative aspects highlighted and their possible impacts in the field of food system studies. As far as the innovative aspect is concerned, we argue that the role of museums as active stakeholders of hybrid systems of governance has not yet been adequately taken into account in food governance discourse. At the moment there is a vacuum that needs to be filled. Reasoning about the potential role of museums and ecomuseums may indeed become useful/important in order to define food governance strategies that have an impact on the system in terms of sustainability transformations.

Bibliography

Alimentarium. (2023). Mission & Foundation. Retrieved from: https://www.alimentarium.org/en/get-involved/co-create#mission-foundation (Last seen on: 29/09/2023).

Andrée, P., Clark, J. K., Levkoe, C. Z., & Lowitt, K. (2019). Introduction–Traversing theory and practice: Social movement engagement in food systems governance for sustainability, justice, and democracy. In Civil society and social movements in food system governance (pp. 1-18). Routledge, London.

Bennett, T. (2005). Civic Laboratories: Museums, Cultural Objecthood, and the Governance of the Social. Cultural Studies 19 (5): 521–547.

Borrelli, N., & Davis, P. (2012). How culture shapes nature: Reflections on ecomuseum practices. Nature and culture, 7(1), 31-47.

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[3] More information are available at the webpage http://www.ecomuseidelgusto.it/

Borrelli, N., Davis, P., Dal Santo, R. (2022). Ecomuseums and Climate Change. Ledizioni, LediPublishing.

Brenner, N. (2001). The limits to scale? Methodological reflections on scalar structuration. Progress in Human Geography 25 (4): 591–614

Davis, P. (2007). Ecomuseums and sustainability in Italy, Japan and China: concept adaptation through implementation. In Museum Revolutions (pp. 224-240). Routledge.

Emerson, K., Nabatchi, T., & Balogh, S. (2012). An integrative framework for collaborative governance. Journal of public administration research and theory, 22(1), 1-29.

Habermas, J. (1987) Theory of communicative action. Volume Two: Lifeworld and system: A critique of functionalist reason. Translated by Thomas A. McCarthy. Boston, MA: Beacon Press

Halliday, J. (2022). Conceptualisations of Urban Food Governance. In Routledge Handbook of Urban Food Governance (pp. 136-151). Routledge, London.

Healey, P., Cars, G., Madanipour, A., & De Magalhaes, C. (2017). Transforming governance, institutionalist analysis and institutional capacity. In Urban governance, institutional capacity and social milieux (pp. 6-28). Routledge, Routledge, London.

Hjalager, A.M., and Wahlberg, M. (2014) Museum guests as contributors to regional food innovation, Museum Management and Curatorship, 29:1, 50-65.

International council of museums. (2007). Museum Definition. ICOM. https://icom.museum/en/resources/standards-guidelines/museum-definition/

Jessop, B. (2013). "Chapter 1 Hollowing out the 'nation-state' and multi-level governance". In A Handbook of Comparative Social Policy, Second Edition. Cheltenham, UK: Edward Elgar Publishing.

Johnston, C. and Andrée, P. (2019). Pathways to co-governance? The role of NGOs in food governance in the Northwest Territories, Canada. In Andrée, P., Clark, J. K., Levkoe, C. Z. and Lowitt, K. (ed.). Civil Society and Social Movements in Food System Governance. 1st Edition. Routledge, London.

Latour, B. (1983). Give Me a Laboratory and I will Raise the World." In Science observed, Perspectives on the Study of Science. Edited by Michael Mulkay and Karin Knorr-Cetina, 141– 170. London: Sage.

Manganelli, A. (2022). The hybrid governance of urban food movements: learning from Toronto and Brussels. Springer Nature.

Musei del Cibo. (2023). Mission dei Musei del Cibo di Parma. Retrieved from: https://www.museidelcibo.it/chi-siamo/mission-dei-musei-del-cibo-di-parma/ (Last seen on: 29/09/2023)

Newell, J. (2020). Climate museums: powering action. Museum Management and Curatorship, 35(6), 599-617.

Rota, M. (2019). Musei per la sostenibilità integrata. Musei per la sostenibilità integrata, Editrice Bibliografica 1-288.

Zago, M. (2018). Il ruolo delle comunità locali e dei turisti nella valorizzazione dei saperi tradizionali: l'esperienza degli ecomusei del gusto. FUTURIBILI, 23(1-2), 193-209.

Raising urban planners' awareness for integration better food and agriculture-related measures into Climate Strategies and Plans – Lessons learned from the Portuguese campaign

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Raising urban planners' awareness for integration better food and agriculture-related measures into Climate Strategies and Plans – Lessons learned from the Portuguese campaign

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This paper shows the preliminary results of a Portuguese campaign that aims to raise urban planners' awareness of the integration of food and agriculture-related measures into Planning instruments. The campaign was materialized in 10 workshops targeting architecture and planning students all over the country and from different academic levels (degree, master, and doctoral programmes). Besides raising urban planners' awareness, the main goal of the workshops was to collect contributions that will feed a toolkit on how to better integrate food into climate territorial planning.
Roughly 200 contributions were collected spanning from questions (106) to concerns and recommendations. Questions were assembled by similarity and gave place to 21 questions and answers which will be illustrated in a FAQ - Toolkit for architects and planners.
Results show that subjects covered by the questions do not mirror all the food system dimensions i.e., there are gaps of knowledge and interest among architects and planners' students notably regarding food distribution and consumption our food governance issues. Second, the subject of the questions can change with academic level, background, and territorial context. For example, governance issues only came up in the workshop with master's and doctoral students. Architect students mostly focus on the city's ability to incorporate food and climate challenges and not so much on the planning dimension. Water scarcity came up in the south territorial Portuguese context where competition for water to drink and for agriculture is currently happening.
In conclusion, scholars and practitioners working in the field of food planning need to be aware that the food agenda is a context-dependent issue. This means that if we want to advance food planning worldwide better-tailored content needs to be developed by taking into consideration context, and at the same time carefully considering food holistic framework by bringing together different disciplines.

Keywords: architecture schools; urban planning; climate change; food planning

Introduction

This paper focuses on how food is being considered in architecture[1] and planning schools in the Portuguese context. Lessons will be taken from the outcomes of a national awareness campaign in all the public and private architecture schools in Portugal, as well as master's and doctoral planning interconnected programmes. Although not a new topic, not much research has been done reflecting this specific entry point. In general, "food remained a stranger to the field of urban planning' until the early 2000s (Pothukuchi & Kaufman, 2000).
The novelty of this paper stands in the consideration of how food planning is considered in schools' curricula and not in planning practices. Based on a literature review, we argued that this entry is missing in the European context. This paper wants to contribute to this reflection in the European context, based on the preliminary results of a Portuguese campaign for Raising urban planners' awareness for the integration better food and agriculture-related measures into Climate Strategies and Plans. The campaign took place in the schools of architecture and related programs in Portugal throughout 2023 fall.

How food planning is being taught in architecture and planning schools?

There is not much regarding the European context. Most of the academic literature related to this specific entry point relates the United States of America (US) context. This is quite understandable as one of the first publications bridging cities and food - "How Great Cities are

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[1] In Portugal urban planning is not a degree however there are several masters and Pd.D. on urban planning related issues. Due to this urban planning in practice is being done mostly by architects or engineers.

Feed" was published in 1929 by Walter P. Hedden – Director of the Bureau of Commerce New York. (US)[2]. Almost one century later, in 2007, Pothkuchi (APA, 2007) formulated for the American Planning Association a Policy Guide on Community and Regional Food Planning. Coming back to the academic literature, Brinkley published "Avenues into Food Planning: A Review of Scholarly Food System Research (Brinkley, 2013) grounded again on the US territorial context. It is recognized that even if planners had long been involved with food systems design, only recently food planning courses are being embedded in planning theory, practice, economic development, public health, quality of life, land use, transportation, or natural resource management. A few years later, in 2014, Vitiello and Brinkley published "The Hidden History of Food System Planning (Vitiello & Brinkley, 2014). The article confirms our assertion since the narrative is limited to the US scenario. More recently Brinkley published "The Ebb and Flow of Planning Specializations" (Brinkley & Hoch, 2021). It traces the arc of development for specializations among the US planning degree programs, concluding that food planning was not at the time listed in the title of the 332 specialization courses offered by seventy-six accredited planning schools in 2016. Although being once listed in one curriculum. Brinkley concludes that even if the basic idea for professional planning grew out of efforts to reconcile the diverse views of multiple disciplines (architects, engineers, doctors, lawyers, social workers, and civic activists) there is a need for continued innovation and diversity of specializations for food planning's resilience at the nexus of an ever-evolving constellation of fields.

The unpublished concept note, on setting up a training module on food systems planning in urban settings (Cabannes, 2020) for FAO and RUAF lists 17 food-related training practices in Asia, Latin America, North America, Africa, and Europe. Just seven of them are embedded into academic programs, and only three of them concern European Universities. Moreover, all trainings are optional, not offered continuously, and none of them target straightforward food planning. Despite not much academic literature has been published taking into consideration how food is being incorporated into schools' curricula, a sub-group of scholars and practitioners working in the field of food planning founded in 2009 the AESOP – Association of European Schools of Planning - Sustainable Food Planning (AESOP-SFP[3]) group. The group has since then organised conferences that bring together planners and interrelated experts on the field of food planning. Not much is written regarding how much this group has impacted upon architecture schools' curricula. This paper intends to be a first attempt to fill this gap taking Portugal as a study case.

Following this brief introduction, section 2 will set up the Portuguese study case. Section 3 will then highlight the results from the analysis of ten workshops carried out in the school of architecture, as well as master's and doctoral programmes and discuss the major findings. The paper concludes with the relevance of the present field of research, in Portugal and beyond.

Methodology and Case Studies

In the first stage, the official list of all Portuguese architecture schools was taken as a baseline. In total from public to private 16 schools are offering architecture degrees. All of them were contacted twice by email. We proposed doing a 1 up to 2 hours workshop for free on the subject of food planning, climate change and food nexus. During the second stage, we listed the most relevant urban studies-related master's and doctoral degrees counting a total of six. At this stage, all the schools contacted with one exception answered positively. A total of 10 workshops, 8 on-site and 2 online were subsequently carried out. Roughly 200 students and professors were involved. The location of the school spans from the north of Portugal (Guimarães) to the South of Portugal (Portimão) to Lisbon where half of the workshops took place (Figure 1).

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[2] https://www.jstor.org/stable/1230203 (accessed on may 2024)
[3] https://aesopsfp.wordpress.com/ (accessed on may 2024)

The workshops happened between October and December 2023. At the beginning of the workshops, the basis of the three following concepts i.e. Food System, climate change mitigating and adaptation, and urban planning were introduced. Then students were invited to write in "post-its" questions they would like to be addressed and if possible, bridging the three mentioned concepts. Afterwards, some examples of policies, program declarations and literature related to food, planning and climate were presented in order to illustrate the challenges and opportunities of those topics. Most of the examples were related to the European context.

Figure 1 – Location of the schools involved in the workshops I Author elaboration

In the end, a second round of interaction happened when students and professors were asked to share comments and recommendations on how to advocate for better integration of food and climate into urban planning.

Results and Discussion

Only 6 out of the 16 schools of architecture enrolled in workshops, meaning below 50 per cent of total which shows that not all architecture schools considered this topic as an emergent issue that should be taught to young students. In addition, it was up to the school criterion to decide on the workshop umbrella. None of the workshops took place in the architecture classes. All workshops happened in classes related to environment, ecology, or geography. On the other hand, the interest in holding those workshops was much higher for master's and doctoral degrees. All the 5 contacted schools agreed to hold workshops. Students profiles are quite different when compared with architectural students, they are older and come from different disciplines backgrounds notably geography, sociology, health, social services, agronomy, law, or architecture

As a result, roughly 200 contributions were collected spanning from questions (106) to comments and recommendations. The next table illustrates the main topics of these contributions.

As shown in Table 1 question content spans 14 topics from Food and Cities being the most mentioned to Governance, Water and Pollution, being the least mentioned.

Results show that for architecture and planning students the first correlation relates to the interconnection between food and cities. This means that the urban-rural divide still persists in

student's minds. This result is in line with previous studies. A survey concluded that the perceived urban-rural divide was a central reason for food to remain a stranger to the field of urban planning until the early 2000s (Pothukuchi & Kaufman, 2000) as food and agriculture were considered a rural topic. Some years later, Sonnino (2009) reached a similar conclusion: 'The urban-rural divide has misled planners and policymakers into looking at urban food supply failure as farm failure, rather than as a failure in the food system. The prevailing sectoral planning and decision-making approach, and its lack of a holistic perspective, seems another reason explaining why 'food has been a stranger' to urban planning (Brinkley, 2013b; Morgan, 2009; Raja et al., 2008).
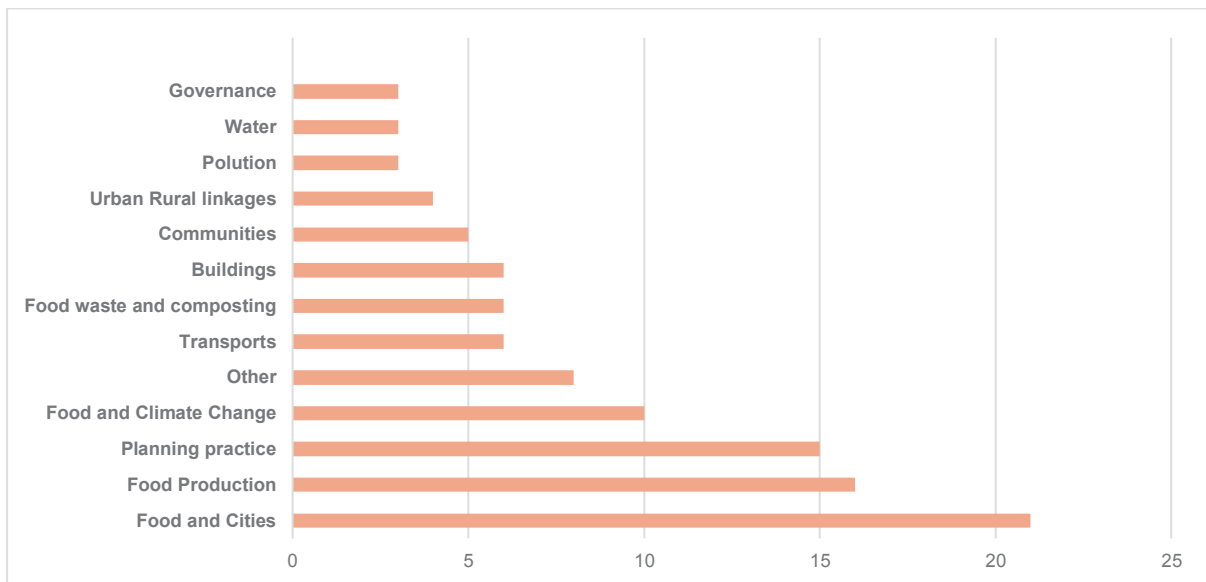

Table 1 – Questions aggregated by topic (n-106)l Author elaboration

The second correlation is related to food production which shows how still allotment gardens are at the core of the food system concept. Indeed, this result is aligned with previous studies namely by Delgado ((2018), which are showing a strong correlation of the productive stage with the Urban Agriculture perception.

Only after comes planning with the questions related to how could planning embed food into its practice. Finally, climate changes come as a cluster. Most of the questions were bridging food and climate without territorial considerations.

Pollution is registered only three occurrences each one of them in different workshops which shows that this is still a recurring concern notably regarding food produced in urban areas. On the topic of water, it is worth mentioning that this concern has been highlighted in Portimão in the south of Portugal where water scarcity is very much on the political agenda. Finally, on the subject of governance, the questions were basically related to how to engage all the food stakeholders in the process notably decision makers. Worth mentioning that this topic only came across in the workshops with master and doctoral students showing that democratic tools are still an issue not embedded in the younger generation from architectural schools.

Some pertinent dimensions of the food system are missing, for example, economy and health. This suggests that climate change impacts are not yet perceived as relevant, at least by this younger generation, despite its severe impacts. For example, climate change will push the increase in food prices and hunger, so planning has an important role in preserving agricultural land in and around cities. Likewise, climate change-related temperature increases will spread interconnected diseases so planning for more productive greening in the cities will be a measure that can be adopted to limit cities' heatwaves. Those impacts were not listed in the workshop participants' concerns.

In addition, results show how difficult it is to materialize the interconnection between food, planning and climate change.

Based on the workshop's contributions a list of 21 questions and answers was set up (table 2) to be included in the Frequently Asked Questions toolkit - for architecture and planners to better integrate food and climate into territorial planning. This toolkit will be disseminated through a national campaign that will try to include different targets as students, practitioners and decision-makers. Based on workshop results questions were split into three groups: 1 – Planning at the intersection with food and climate; 2 – Governance; 3 - Cities, Food and Climate Change. Those three groups consider different targets of interests and expectations, notably the first and second groups mostly targeting master and doctoral students whereas the third one architect's students.

Urban Planning
1. How can territorial planning, food and agriculture be linked?
2. How can master plans and other territorial instruments include food and climate change?
3. What role should architects, and urban planners play in this process of incorporating food and climate into urban planning?
4. How can we ensure equal access to food in cities using urban planning as a tool?
5. How can plan regulate agricultural land in urban areas?
6. How can water scarcity, particularly regarding agricultural production, be addressed in territorial planning instruments?
7. How can planning mitigate the potential impact of pollution (air and soil) on food production?
8. Apart from urban allotments, which other assets can urban planning foresaw in cities, notably regarding food production?

Governance
9. What is the European policy perspective on the planning, food and climate change nexus?
10. Are cities politically, economically, and culturally prepared for the issue of food and climate change?
11. Is there any good practice regarding food actors' mobilization, in the context of urban food planning?

Cities, Food and Climate Change
12. Are there any examples of cities with local food strategies? Notably, having climate change as an entry point
13. Is there an indicator to quantify the % of land needed to feed a city?
14. How does climate change impact the city's food supply?
15. Is it feasible to feed a city through urban gardens?
16. Isn't it a bit demagogic to create urban kitchen gardens in cities when the cost of a square metre of urban land is extremely high and housing is in short supply?
17. Is it possible to produce meat and fish in cities?
18. How does the food chain impact the way the city is structured?
19. How can we promote and foster more sustainable food transport?
20. Are there any good examples of cities that have a public composting network? Why should it be planned? How does it connect to climate change?
21. How can a building's architecture support food production and mitigate climate change?

Table 2 – List of FAQ – Architects and Planners toolkit

Those 21 questions do not mirror a specific student question, but a combination of several ones related. In addition, there was a clear effort to cover each one of the food system dimensions and their interconnection with climate change and food planning. This is a first attempt to put food planning into the Portuguese scholar's agenda. Hopefully, results will emerge in years to come.

Conclusions

Besides raising urban planners' awareness, another goal of this campaign was to collect contributions that will feed a toolkit on how to better integrate food into climate territorial planning. Although being well achieved with an overall impact on 200 students and professors the campaign shows that there is a long way to go to have food planning as part of schools of architecture curricula. Architecture students' ability to be open to other fields and scales beyond the neighbourhood is still a challenge. This means that in countries such as Portugal lacking a strong urban planning tradition, the connection between different

disciplines can be an additional challenge as food requires a holistic perspective, often not required in architecture schools.

On the other hand, openness seems to be more present in master's and doctoral programs where mixed disciplines backgrounds are present. Here it is not the individual vision that rules but the collective thinking which is in line with food need for a multidisciplinary approach. At this point, two concluding questions arise: 1 – Should architecture schools adopt a broader curriculum including holistic topics such as food, as an opportunity to lead the way to an emergent topic? Or, 2 - Should food planning be considered a specialization in the students' careers? So far, master's and doctoral programs seem to be the right place to introduce this topic as the mixed students' disciplines backgrounds is an enabler to the multidisciplinary approach that food requires.

Finally, food is context-dependent. This means that food planning needs to integrate several territorial dimensions such as resources availability (such as water, land, etc), and social, economic, or cultural scenarios. This means that there is not a one-size-fits-all answer on how food should be incorporated into the school curricula if we want to make it meaningful for students.

In conclusion, scholars and practitioners working in the field of food planning need to be aware that the food agenda is a context-dependent issue but at the same time needs a holistic approach. This means that if we want to advance food planning worldwide, better-tailored content needs to be developed by taking into consideration context and at the same time carefully considering food holistic framework by bringing together different disciplines.

Acknowledgements:

Bibliography

APA. (2007). Policy Guide on Community and Regional Food Planning. In *APA,* (p. 24). American Planning Association.

Brinkley, C. (2013a). Avenues into Food Planning: A Review of Scholarly Food System Research. In *International Planning Studies* (Vol. 18, Issue 2, pp. 243–266). https://doi.org/10.1080/13563475.2013.774150

Brinkley, C. (2013b). Avenues into Food Planning: A Review of Scholarly Food System Research. *International Planning Studies*, *18*(2), 243–266. https://doi.org/10.1080/13563475.2013.774150

Brinkley, C., & Hoch, C. (2021). The Ebb and Flow of Planning Specializations. *Journal of Planning Education and Research*, *41*(1), 79–93. https://doi.org/10.1177/0739456X18774119

Cabannes, Y. (2020). Concept Note on set up and content of the training module on Food Systems Planning in Urban Settings (unpublished). (pp. 1–20).

Delgado, C. (2018). Contrasting practices and perceptions of urban agriculture in Portugal. *International Journal of Urban Sustainable Development*, *10*(2). https://doi.org/10.1080/19463138.2018.1481069

Morgan, K. (2009). Feeding the city: The challenge of urban food planning. *International Planning Studies*, *14*(4), 341–348. https://doi.org/10.1080/13563471003642852

Pothukuchi, K., & Kaufman, J. L. (2000). The Food System: A stranger to the planning field. *Journal of the American Planning Association*, *66*(2), 113–124. https://doi.org/10.1080/01944360008976093

Raja, S., Born, B., & Russell, J. K. (2008). A planners guide to community and regional food planning. *APA Planning Advisory Service Reports*, *554*, 1–106.

Sonnino, R. (2009). *Feeding the City: Towards a New Research and Planning Agenda*. *14*(4), 425–435. https://doi.org/10.1080/13563471003642795

Vitiello, D., & Brinkley, C. (2014). The Hidden History of Food System Planning. *Journal of Planning History*, *13*(2), 91–112. https://doi.org/10.1177/1538513213507541

PAPER SESSION 4.F
EXPERIMENTING
FOR
FOOD EQUITY

Traditional public markets: inclusive hubs for a just food systems

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Traditional public markets: Inclusive hubs for a just food system

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Traditional public markets in the UK, selling food and household items, and mainly owned and managed by municipal authorities, can support public policies for a socio-ecological just food transition if they are linked to public health, food and environmental policies. However, there is a lack of research and policy focusing on this area particularly on how to avoid a potential "green" gentrification process. The paper focuses on a policy-led research project in collaboration with Bradford City council to develop a Sustainable and Healthy charter for a new public market in the city centre. The research involved meetings with the public health and market management teams of the council, four interviews with stakeholders, a survey of 21 traders and a community engagement event at a market where we spoke to 50 market users as well as data from 2 public consultation surveys. The research highlighted the role traditional markets are currently playing in the just food system transition. It also reveals the challenges and risks for local public authorities in the UK to pursue these policies in a context of austerity and competing priorities on urban regeneration and income generation.

Keywords: Traditional markets; Food policy; Sustainability; Health; Local authorities

Introduction

In this paper we argue that traditional markets can support public policies for a socio-ecological just food transition if they are linked to public health, food and environmental policies although there are significant risks if vulnerable groups are not included in the strategies. Our argument is illustrated with the results of a policy-led research project where we were commissioned by Bradford Metropolitan District Council (Bradford Council for short), a local authority in the north of England, to support them in aligning their investment into a new public market with their public health and sustainable local development policies. The paper presents our key findings and recommendations within the context of a complex and challenging environment for traditional public markets in the UK[1].

Bradford has a young and ethnically diverse population of 500,000 (Bradford JSNA, 2019) and is one of the most deprived local authorities in England (13th out of 317 in the country) (Bradford JSNA, 2022). Health and wellbeing across the district are poor with life expectancy lower than in the wider Yorkshire region (Bradford.gov, 2021; OHID, 2023). The food environment in the Bradford district contributes to poor health, with the highest concentration of fast-food outlets in the Yorkshire region (142.1 outlets per 100,000 population) (   ).

The local authority in Bradford is responding to these challenges and in 2023, the Bradford Good Food Strategy (Bradford.gov, 2023) set out a vision for the future of food in Bradford, supporting the development of an Eating Well culture, reducing food Insecurities, improving community-led food growing, and promoting a sustainable food system for all. However, achieving these aims in Bradford is challenged by the competing ambition to promote local economic development within a context of austerity policies. Whilst Bradford was at the centre of the colonial-dependent industrial revolution as a manufacturing centre, it has long since suffered a post-industrial decline. It has the highest unemployment rate in the wider Leeds City Region, with 7.6% of the working age population claiming unemployment benefits (Bradford.gov, 2024). And in terms of retail, Bradford has one of the highest proportions of empty shop units in England at over 20% (McDonald and Swinney, 2019).

In this context, Bradford Council has adopted a strategy to push its own investment via the 'Economic Recovery Plan' (Made in Bradford, 2021). It is within this context that the council has developed a retail strategy, closing two existing (and largely disinvested) markets and investing £23million in developing a new market, Darley Street Market, due for completion in Autumn 2024 (Bradford Markets, 2022). The market will have three floors: ground floor with non-food and beauty services, first floor with fresh foods, and the top floor with an open-plan world food and drink hall (Bradford Markets, 2024). The market aims to be an exemplar of the district's green regeneration and sustainability ambitions (Bradford Markets, 2022) and has been designed with integrated ecological features such as a smart heating system, an energy management system and solar roof panels. In tandem, the operation of the market will align with the Bradford Good Food Strategy, with a focus on reducing the environmental impact of food (and other products) sold at the market, offer healthy hot food options and to maintain the affordability, variety, and diversity of fresh food. Traders, who will include those moving from the other two Bradford markets (due to be closed) and those from across the city and beyond, will also be expected to work towards achieving this vision.

To support the market team to align market operations with the Bradford Good Food Strategy, we were commissioned to develop a "charter" for the local authority and the market traders. The rest of the paper discusses the methods we used and our key findings.

Public markets: opportunities and challenges in strategies for just food systems

Traditional public markets in the UK are "generalist" retail markets selling affordable fresh food (not necessarily local), household goods, electronics, clothing or furniture and increasingly prepared and hot food. Across the UK, there are just over 1,000 traditional markets, 87% of them managed and owned by public local authorities (NABMA, 2022) and take various forms from covered historical market halls to daily or weekly street markets. These traditional public markets tend to mainly serve low-income groups, older people, and those from minoritised ethnic communities, however, people from a diverse range of communities also frequent them. Traditional public markets are distinct from "farmers markets", of which there are over 2500 in the UK (Yassin, 2024), which are smaller, sell locally sourced food, direct from producer to consumer and tend to cater for higher income groups.

Although historically public markets emerged partly to control food prices and ensure food supply (Schmiechen and Carls, 1999) structural changes in retail such as the domination of supermarkets and of online shopping, have marginalised them to only a small portion of the whole retail sector (Smith, 2012). Additionally, changes in local authority finances and priorities have also led to a gradual decline and disinvestment from public authorities (Taylor and Gonzalez, 2024) Despite this, traditional public markets in the UK, such as the new Darley Street Market in Bradford, can play an important role in supporting a just and socio-ecological transition to a better food system, although this potential is under researched and undervalued. Emerging research has shown that these markets can increase access to healthy and affordable food. In Grainger Market (Newcastle) and Bury (Greater Manchester), market users from neighbourhoods with poor food store provision (food deserts) stated that they relied on shopping at markets for fresh food more than those that came from better provided areas (Newing et al., 2023). This was further supported in Bury when market traders were encouraged to accept Healthy Start cards (a scheme to support young families with fresh food), and the uptake increased from 62% in January 2023 to 65% in April 2023 (Bury Market, 2023). Moreover, traditional public markets can support shorter supply chains, with traders buying their produce from regional wholesale markets and selling seasonal and local produce (Smith, 2012).

However, despite this potential there are important challenges and risks that need addressing. First, there is a growing tension between economic profit and public health; food systems are not driven to deliver human health through optimum human diets, but to maximize profits (Stuckler and Nestle, 2012). This contradiction is starker in poorer areas where austerity cuts in local public services have been more severe even leading to long term deterioration in public

health (Marmot et al, 2020). In this context, councils aim to generate a financial surplus for the operation of their markets, promoting outlets that bring more footfall such as fast food. For example, research by Machel and Caraher in 2012 revealed that in Leeds Kirkgate Market the proportion of fast-food stalls relative to fresh food stalls was 3 to 1 thus promoting an obesogenic environment in a publicly owned and managed asset (Burgoine et al., 2014). Relatedly, many local authorities pivot their markets towards a more elite offer, gentrifying markets into leisure and tourist destinations often anchored in a foodie offer, risking their key provisioning role for those who need it most (Taylor and Gonzalez, 2024), whilst also hampering their potential contribution towards an ecological just food system.

A further challenge relates to green gentrification, a process whereby the introduction of green infrastructures and policies, such as parks, greenways, and community gardens leads to the displacement of low-income residents and the influx of higher-income residents as areas become more desirable and prices increase (Anguelovski et al., 2022). In the context of markets, the introduction of sustainability and public health policies (such as Darley Street Market in Bradford) promoting local and/or organic produce or healthy food can lead to the displacement of long term traders and shoppers as products and rents go up or because a change in the feel of the new space where long term users feel out of place.

Our research aimed to support Bradford Council in promoting health and sustainability policies in their new Darley Street market whilst mitigating against these displacement risks. We developed market 'charters' for traders and the market team to follow when moving into Darley Street Market.

Methods

To develop the market charters we undertook a collaborative, multi-phase research project in partnership with Bradford District Council's public health and market teams, and with input from existing traders and members of the public.

Drawing on our existing expertise on traditional markets in the UK we conducted further academic and policy literature review on environmental and food systems aspects and we held an online workshop with academics (n=8) working in sustainability, nutrition, and behaviour change to test method ideas and identify key themes. Throughout the project (between March 23 and 24) we had regular meetings with the Bradford council public health and market management teams, discussing our progress and receiving feedback. We also interviewed key stakeholders such as a senior council officer on sustainability, the new market's architect firm, a local consultancy on sustainable business practices and a local food poverty charity. Using insights from these methods and in alignment with the Bradford Food Strategy we decided on key principles that the charters should cover which we then tested with traders and the public.

For traders, we developed a short online survey which was distributed via email by the council to all the traders that had applied (at the time of the research March 2023) to trade at Darley Street Market. Traders took part in the survey voluntarily, and 21 responses were captured (which is a 46% response rate). The survey, sought feedback on the key principles and information on the traders' current practices relating to waste, product sourcing and transport. Additionally, an in-person engagement event at Oastler market in Bradford was hosted on the 28ᵗʰ of October 2023 to capture feedback from community members and to explore perceptions of the public on the current market provision. It was led by a community engagement specialist, supported by local artists, a young trader and ourselves. We engaged around 50 members of the public on conversations around food waste, travel to the market, and food choices. Notes were made during conversations which were discussed and shared amongst the team. Further perceptions from members of the public were obtained from two separate public surveys (July 2022 and Oct 2023) run by Bradford public health team which had specific questions on Darley Street Market (n= 250 and n=352 respectively).

The final stage of the research project involved bringing together all the collected insights and data to create the Darley Street healthy and sustainable market charters to share with the market and public health teams and seek feedback on their implementation. In the next sections we present the charters, and we discuss the most relevant findings and our recommendations.

Healthy and Sustainable Market charters: Key principles

We developed two healthy and sustainable charters for Darley Street Market. Although similar in scope, one charter was adapted for market traders and the other for Bradford Metropolitan District Council, Figure [1]. Both charters cover health, and sustainability, and consider the range of priorities highlighted in the literature and raised by traders and the public.

Figure 1. Sustainable and Healthy Market Charters for Bradford Metropolitan District Council. Source: Authors

Traders Sustainable and Healthy Market Charter

As a trader of the new Darley Street market, you commit to work towards a Healthy and Sustainable market by agreeing to:

- Promote and offer healthy and fresh food options at affordable prices, aiming to reduce ultra-processed, high-fat/high-sugar/high salt products.

- Source, promote and celebrate products that reflect the diversity of cultures in Bradford.

- Source your products as locally as possible to reduce food miles and support the local economy.

- Reduce packaging and the use of plastic and non-recyclable materials in your business, working towards a plastic free market vision for 2035.

- Take all actions possible to reduce the volume of waste (food and others) produced by our business.

- Reduce the energy used to run your business as much as possible, finding alternatives for more sustainable transport and energy use in your stall.

Bradford Metropolitan District Council Sustainable and Healthy Market Charter

As a member of the council team, working at, and/or managing the new Darley Street market, you commit to work towards a Healthy market by agreeing to:

- Adopt a "Health in all policies" approach to the operation of the market, promoting the market to residents as a part of the Living well/Eating well brand/campaign.

- Support traders to promote and offer healthy and fresh food options.

- Enable traders to sell products at affordable prices. For example, by keeping rents fair.

- Work with traders to reduce the availability of ultra-processed, high-fat/high-sugar/high salt products and ensure healthy options are available and visible throughout the market.

- Working with traders and other stakeholder across the region, to source products as locally as possible to reduce food miles and support the local economy.

- Promote the market as a space to celebrate the cultural diversity of Bradford.

- Turn the market into an exemplar of sustainable and reusable packaging, supporting traders to reduce packaging and the use of plastic and non-recyclable materials, promoting working towards a plastic free market vision for 2035.

- Work with traders and members of the market operations team, to reduce energy consumption by exploring sustainable alternatives for both transportation and overall market operations, seeking ways to reduce reliance on conventional energy sources.

- Take all actions possible to reduce the volume of waste (food and others) produced by the market, offering composting facilities and supporting relationships between traders and food redistribution and surplus food charities.

- In collaboration with regional stakeholders, promote and facilitate active travel options to the market by customers, traders and staff.

The charters are organised around six shared principles: 1) access to affordable, healthy, and fresh food choices, 2) promotion and celebration of the diversity of cultures in Bradford, 3) promotion of locally and regionally produced, made and grown products, 4) reduction in packaging and fading out of single use plastic, 5) reduction in overall waste from the market, and 6) improvement in the energy efficiency of market operations.

The principle relating to the improved access to affordable, healthy, and fresh food choices aligns with the Bradford Good Food strategy (Bradford.gov, 2023) and was highlighted as the most important for market users and members of the public. Two quotes from market users illustrate these points: "I buy meat and fruit from the market. It is cheaper and better quality' (28 years old, Nigerian heritage)" and 'Food is cheaper in the market and has more cheaper options. It is a financial choice.' (32 years old, African Nigerian).

As well as affordability, members of the public highlighted the importance of being able to access culturally appropriate food and were positive about the culturally diverse offers at the current markets in Bradford. As a result, we included a principle in the charter relating to the promotion and celebration of the diversity of cultures in Bradford. Many customers mentioned that they visit the market mainly to take advantage of the range of cultural food options available: "I can buy plantains, and ingredients for Mexican food that I cook for my family", said a Female, Mexican heritage customer and "I buy ingredients for Nigerian meals, peppers, good meat, which is more fresh than the supermarket, and fish", commented a 32 years old, African Nigerian heritage customer.

Another key principle of the charters is to promote locally or regionally sourced products. This is something highlighted in Bradford's Good Food strategy and generally recognised as important to strength local food systems. However, our findings showed that local produce is not currently prioritised by traders, the council, or members of the public at existing Bradford markets, with customers and traders concerned that local/regional produce is more expensive. Traders also told us that they would struggle to find local suppliers for their products and that their customers would not necessarily value locally sourced fruits and vegetables as some of them seek those that come from their country of origin. In our discussions with the council, increasing the percentage of locally sourced produce sold at the new Darley Street Market (comparing to the current market to be closed) was considered as an important target although the council at the moment lacks information and resources to support traders with this.

Reflecting the significant impact that plastic can have on the environment (Jones et al, 2024), the charters include a principle on fading out of single use plastics and packaging waste. Traders were keen to minimise the use of single use plastic, and results from the survey indicate that over a third supported the use of recyclable containers or customers own containers as alternatives to single use plastics for food packaging. Packaging is one of the largest contributors to the waste produced by the market currently, according to the market team. However, traders highlighted that being at the end of the supply chain, they feel powerless to influence the reduction of plastic and packing from their suppliers.

Reducing food waste is a critical step in reducing emissions from the wider food system as well as ensuring more people have access to affordable food and this is a key principle in charters. Fresh food does not appear to be a large contributor to waste produced by the market. We spoke to fresh food traders about how they manage food nearing its sell by date, and they stated that they discount it, or take it home for their own families. It was less clear how hot food traders in the market deal with food waste. Customers are already making efforts at home to reduce the food waste they produce. For example, customers stated that they only buy what they need, something that the market allows them to do, and if there is any food left over from meals, it is either eaten over the following days, or frozen. It was clear from the customers that we spoke to that they came to the market to by specific products which they particularly value and they were not going to waste them. This is illustrated by two quotes from market users: " I don't make food waste. I make food and if there is left overs, I eat it over the next few days' (Unknown); "'I reduce food waste by cooking in batches, and freezing what we don't eat. We then eat it at a later date".

Challenges and recommendations

Despite the potential of the charters to enhance the sustainability of market operations, several risks are associated with their implementation. One significant risk is the phenomenon of "green gentrification," explained before. Traders and customers that we gained data from regarded locally sourced products more expensive to sell and buy and Oastler market (due to be closed), where we conducted the community engagement event, is highly regarded as a source of affordable products. If local sourced products are prioritised at the new Darley Street market and the market offer is altered to offer higher quality and more expensive products this could lead to the exclusion of groups that currently benefit from the affordability of the public markets. In fact, the move to the new market has already discouraged several traders who

currently trade at Bradford Markets. This potential exclusion runs counter to the market's role as an inclusive community hub and could exacerbate social inequities.

To mitigate against some of these risks, we recommended that the market operations team worked with other council teams including public health to promote a flexible, phased, and collaborative approach, taking on board diverse perspectives. We also recommended that a Darley Street market Healthy and Sustainable advisory team to be launched. We recommended that this team included council staff from economic development and health teams, representatives of community groups, traders and other stakeholders across the city to ensure that a range of voices were heard during the implementation of the charters, and in their monitoring. In terms of monitoring of the charters, we suggested that this was done in collaboration with traders, so as not to add another layer of regulations. It was suggested that to monitor the implementation of the principles in the market, an annual survey would be delivered by the traders for traders, and an audit form would be compiled and completed by the local authority's market staff.

Conclusion

In conclusion, Darley Street market in Bradford has the potential to contribute locally to a just food transition, promoting affordable and nutritious food for diverse communities, sourcing local and regional food and reducing food and plastic waste. It can also serve as an important community hub, fostering social connections, cultural exchange, and local economic activity. Our proposed sustainable and healthy market charters offer a structured approach to achieving these goals, ensuring that market practices support environmental stewardship and promote the well-being of all stakeholders. It is important, however that the market continues to be inclusive of all groups particularly minoritised communities and those on low incomes, mitigating against a potential process of 'green' gentrification. Darley Street market can become a model for other community markets striving to balance tradition and community building with health-focused sustainability.

References

Anguelovski, I., Connolly, J. J., Cole, H., Garcia-Lamarca, M., Triguero-Mas, M., Baró, F., ... & Minaya, J. M. (2022). Green gentrification in European and North American cities. *Nature communications*, *13*(1), 3816.

Bradford Joint Strategic Needs Assessment (2019). The population of Bradford District. Chapter 4. (Online) Available from: https://jsna.bradford.gov.uk/The%20population%20of%20Bradford%20District.asp [Accessed 02/11/23]

Bradford Joint Strategic Needs Assessment (2022). Health Inequalities and life expectancy. Chapter 1. (Online) Available from: https://jsna.bradford.gov.uk/documents/The%20population%20of%20Bradford%20District/1.2%20Health%20Inequalities%20and%20Life%20Expectancy/Health%20Inequalities%20and%20life%20expectancy.pdf [Accessed 30/10/23]

Bradford.gov (2021). Health and Life Expectancy. (Online) Available from: https://ubd.bradford.gov.uk/about-us/health-and-life-expectancy/ [Accessed 31/10/23]

Bradford.gov (2023) Bradford District Good Food Strategy. (Online) Available from: https://www.bradford.gov.uk/health/living-well/bradford-district-good-food-strategy/ [Accessed 27/05/24]

Bradford.gov (2024). Unemployment (Online) Available from: https://ubd.bradford.gov.uk/about-us/unemployment-in-bradford-district/ [Accessed 27/05/24]

Bradford Markets (2022). Darley street market to lead district's green regeneration. (Online) Available from: https://www.bradfordmarkets.com/developments/darley-street-market/ [Accessed 27/05/24]

Bradford Markets (2024) Darley Street Market. (Online) Available from: https://www.bradfordmarkets.com/the-markets/darley-street-coming-soon/ [Accessed 27/05/24]

Burgoine T, Forouhi N G, Griffin S J, Wareham N J, Monsivais P. (2014) Associations between exposure to takeaway food outlets, takeaway food consumption, and body weight in Cambridgeshire, UK: population based, cross sectional study BMJ 348 :g1464 doi:10.1136/bmj.g1464

Bury Market (2023) NHS Healthy Start Success. (Online) Available at: https://www.burymarket.com/bury-market-news/nhs-healthy-start-success [Accessed 07/11/23]

Department for Business, Energy and Industrial Strategy. UK Local Authority And Regional Greenhouse Gas Emissions [Online]. Available at https://www.data.gov.uk/dataset/723c243d-2f1a-4d27-8b61-cdb93e5b10ff/uk-local-authority-and-regional-greenhouse-gas-emissions. [Accessed 02/01/24]

Jones, M., Peters, G P., Gasser, T, Andrew, R M., Schwingshackl, C, Gütschow, J, Houghton, R A., Friedlingstein, P, Pongratz, J, & Le Quéré, C. (2023). National contributions to climate change due to historical emissions of carbon dioxide, methane and nitrous oxide. *Sci Data* 10, 155. https://doi.org/10.1038/s41597-023-02041-1

Made in Bradford (2019). Bradford District Economic Recovery Plan (Online). Available from: https://www.bradford.gov.uk/media/6290/bradford-district-economic-recovery-plan.pdf [Accessed 27/05/24]

Marmot, M., Allen, J., Boyce, T., Goldblatt, P. and Morrison, J. (2020) Health equity in England: The Marmot Review 10 years on. London: Institute of Health Equity

McDonald, P. and Swinney, R. (2019) City Centres, past, present and future. Their evolving role in the national economy. (Online). Available from: https://www.centreforcities.org/reader/city-centres-past-present-and-future-their-evolving-role-in-the-national-economy/the-performance-of-city-centres/ [Accessed 27/05/24]

Machell, G. & Caraher, M. (2012). The role of municipal markets in urban food strategies: a case study. In: Viljoen, A. M. & Wiskerke, J. S. C. (Eds.), Sustainable Food Planning: evolving theory and practice. (pp. 127-136). Wageningen Academic Pub. ISBN 9086861873 doi: 10.3920/978-90-8686-187-3

NABMA (2022) National Markets Survey 2022. Oswestry: NABMA. (Online) Available at https://nabma.com/markets-first-securing-the-future-for-uk-markets/#:~:text=The%20NABMA%20Survey%2C%20published%20in,NMTF%20the%20last%20national%20Survey.

Office for Health Improvement and Disparities (2023). Public health profiles. Bradford. Percentage of adults (aged 18 plus) classified as overweight or obese. (Online) Available at: https://fingertips.phe.org.uk/search/obesity#page/4/gid/1938133390/pat/6/par/E12000003/ati/501/are/E08000032/iid/93088/age/168/sex/4/cat/-1/ctp/-1/yrr/1/cid/4/tbm/1 [Accessed 31/10/23]

Schmiechen, J. and Carls, K. 1999. The British market hall : a social and architectural history *In: New Haven: Yale University Press.*

Smith, J. (2012). Traditional food markets: re-assessing their role in food provisioning. In *Sustainable food planning: evolving theory and practice* (pp. 137-148). Wageningen Academic.

Stuckler D, and Nestle M (2012) Big Food, Food Systems, and Global Health. PLoS Med 9(6): e1001242. https://doi.org/10.1371/journal.pmed.1001242

Taylor, M., & González, S. (2024). "28: Retail Market Futures: Retail Geographies from and for the Margins". In *Contemporary Economic Geographies. Bristol, UK: Bristol University Press.*

Yassin, J. (2024) The rise of the UK farmer's market. (Online) Available from: https://profiletree.com/the-rise-of-uk-farmers-market-statistics/ [Accessed 27/05/24]

Urban Agriculture, Land, and Environmental Justice in San Diego, California

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Urban Agriculture, Land, and Environmental Justice in San Diego, California

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Community gardens have become popular in cities of the Global North as part of a greening agenda promoted by local governments and nonprofits. Its proponents argue that growing food in urban environments provides a variety of environmental, social, economic and health benefits.

However, urban farming does not happen in a vacuum. It takes place in cities that are shaped by historical and current political, economic, and social forces, which underly food injustices such as uneven access to food, land, and dignified food jobs. Thus, urban growers face different opportunities and constraints, which in turn lead to disparities in the benefits of urban agriculture, challenging its common perception as a grassroots solution to create more just food systems that primarily address the needs of low-income households, including immigrants and people of colour.

While the environmental justice literature provides ample evidence that people of colour and low-income people tend to have lower access to green space and higher exposure to pollution, we have limited knowledge of how these patterns impact urban agriculture in US cities. To the extent that these populations disproportionately reside in older urbanized and industrialized areas, they may have lower access to clean and uncontaminated land where they can safely grow food. In addition, they may have limited resources to address potential contamination. Yet, when they beat these odds and build successful green spaces, they often face gentrification and displacement. Unless we recognize and address these disparities, urban agriculture will fail to generate food justice.

This paper aims to address this research gap and contribute to both academic literature and urban policy by examining: (1) the availability and quality of land for urban agriculture in San Diego County and their relationships to the region's racial and socio-economic urban geography, (2) differences in growers' understanding and response to these environmental hazards, and (3) the spatial relationship between greening efforts and gentrification in low-income communities of color. Our research is based on fieldwork we conducted in urban San Diego County in 2023, collecting both qualitative and quantitative data from 53 community gardens, including soil samples, audits, and interviews. These data will be combined with fine scale public data about historical and current land use, population, housing, and pollution. Our findings will generate a better understanding of the importance of land/soil in urban agricultural geographies and will assist community organizers and policymakers by emphasizing its significance in shaping the opportunities and benefits of urban agriculture.

Keywords: urban agriculture, environmental justice, soil, land access, gentrification

Introduction

This paper examines the challenges of expanding community agriculture in cities through an environmental justice perspective emphasizing access to land and healthy soil. Centring soil as a "material record of systemic harms" (Shostak 2022) opens a unique avenue for exploring how political and ecological processes produce different capacities to grow food collectively within urban space.

During the past two decades, cities around the world have engaged in urban greening initiatives, including urban agriculture, with the somewhat conflicting goals of stimulating urban growth while addressing climate change and social inequities (Neidig et al. 2022). Advocates of urban agriculture argue that community gardens can bring about a series of "multifunctional" benefits, including increased green space, food security, physical and mental health, sense of community, civic engagement, neighbourhood revitalization, and environmental sustainability (Lovell 2010, McClintock 2010).

Yet, after two decades of urban agriculture mainstreaming and soaring research on the topic, however, we still know little about the equitable distribution of benefits amongst urban residents. This is partly due the fact that we have focused much scholarly energy on documenting benefits of existing gardens, while paying limited attention to the obstacles that

less powerful growers face in establishing and maintaining gardens that provide such benefits (Diaz et al. 2018, McClintock 2010).

Proponents of urban agriculture often portray cities as full of opportunities, including an abundance of vacant lots and brownfields ready to be transformed into vibrant gardens with the good will of community members (Anderson & Minor 2017, Drake and Lawson 2014). Yet, research shows that one of the biggest barriers to community-based agriculture is limited access to land (Surls et al. 2014, Wesener 2020), which is often tied to class and race (Slocum 2007, Reynolds 2015).

This paper takes inspiration from scholarship in urban political ecology, including emerging social research on soil, to examine geographic disparities in access to *land* and *soil* for community gardening. My primary goal is to understand social differences in the opportunity to grow food collectively in cities and identify ways to facilitate urban agriculture for groups that have been excluded from contemporary urban greening initiatives. I focus on San Diego, a growing and sprawling metropolitan area whose local governments have recently voiced support for urban agriculture to "advance climate justice, resilience, and adaptation in disadvantaged communities" (City of San Diego 2024) but have allocated scant resources to existing or aspiring urban gardeners.

Political Ecologies of Soil

Without rejecting the insurgent potential of urban agriculture, scholars have begun challenging the celebratory accounts that dominate the literature and raising questions about who gets to participate in and benefit from such projects (Classens 2015, Tornaghi 2014, Bosco and Marcelli 2017). Given the significance of soil for agriculture, it ought to be at the centre of analyses seeking to understand obstacles to expanding community gardening in cities.

Social scientists have begun theorizing urban soils as socially produced through planning, policy, investment, and everyday human activity that influence their biological, physical, and chemical attributes (Shostak 2022, Granjou and Meulemans 2023, Tironi et al. 2022). Urban political ecologists have long argued that urban nature, such as rivers, forest, soils, and gardens, is shaped through the process of capital accumulation, which underlies uneven urban development and leads to a "metabolic rift" robbing nature of its ability to reproduce itself and sustain society (Swyngedouw and Heynen 2003). Within that framework, land is a "resource" whose value is determined by the real estate market. Soil is a residue – what is left over, depleted, and polluted after the process of urbanization (Engel-Di Mauro 2020). It is also a "material record of systemic harms" (Shostak 2022), with contamination and degradation concentrated in marginalized communities and posing an elevated risk for urban growers in those places (Egerer et al. 2018).

At the same time, urban agriculture has the potential to heal the metabolic rift by reclaiming vacant lots, localising food production, and reconnecting people to nature (McClintock 2010). As Shostak (2022, 400) argues, soils offer opportunities for healing, especially in communities where the bound with nature has been weakened by environmental racism. The capacity for such healing, however, is shaped by political and economic forces underlying large scale patterns of urbanization and influencing the availability and quality of land for urban agriculture as well as resources to amend and manage soil. This paper focuses on the tension between these structural processes and the "myriad of interventions, solidarities, and apparatuses" (Tironi et al. 2022, 24) that bring soil into being as growers plant crops, add compost, recycle water, attract bugs and critters, bring people together, share knowledge, and revive ancestral practices.

Methods

The paper relies on data I collected with students at San Diego State University in the fall of 2023. We visited the 78 active community gardens we identified in the urbanized part of San

Diego County and were able to conduct audits, take pictures, interview managers and growers, and gather soil samples in 53 gardens.[1]

These quantitative and qualitative data are merged with fine scale public data on land cover (US Geological Survey 2021), land use (San Diego County Assessor 2024), pollution (California EnviroScreen 2023 and Environmental Protection Agency 2024), and demographic characteristics (American Community Survey 2018-2022) to map and contextualize urban agriculture within the politically produced social and environmental landscape of the region.

The Landscape of Urban Agriculture: From Land to Soil

San Diego's agricultural landscape is depicted in figure 1, which reveals a seemingly random distribution of community gardens throughout the urbanized areas. Indeed, gardens can be found in many different types of neighbourhoods and their location is not significantly correlated with any class or race indicators, suggesting that they are not necessarily concentrated in low-income communities of colour as implied in the literature.

By contrasting garden locations with patterns of food insecurity, percent non-white, and pollution burden, figure 1 suggests that gardeners, especially in the urban core of the region, face both social and environmental challenges in maintaining or accessing healthy land to grow food. There are striking similarities between the distribution of these three risk factors, providing evidence of the social underpinning of environmental injustices, which disproportionately impact racially minoritized and food insecure populations. Ten gardens (about 13 percent) are in "vulnerable places" – census tracts where food insecurity, percent non-white, and the overall pollution burden are in the top third for the study area. Many of the most vulnerable neighbourhoods, including Barrio Logan, City Heights, and Southeastern San Diego, had been "redlined" decades ago when the Homeowner Lending Corporation labelled them as too risky for investment, setting in motion decades of divestment and neglect, which studies have linked to food apartheid (Joassart-Marcelli 2021).

Figure 1: Community Gardens in relation to food insecurity, race, pollution, and vulnerability
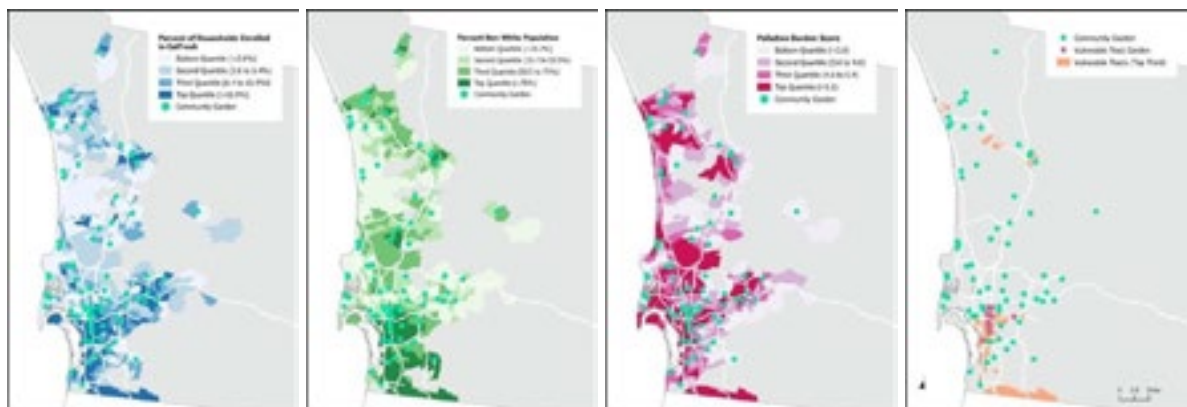
Source: Author with data from US Census (ACS 2018-2022 5-year estimates), California EnviroScreen (2023), and SDSU Community Garden Project (2023)

Vulnerable areas, including many redlined places, are often perceived as "blighted." Although blight may provide an impetus for urban agriculture because of the combination of food insecurity and vacant lots, this condition also presents challenges for growers related to pollution and lack of resources.

Community gardens represent approximately 31 acres of farmed land – a very small area compared to 10,839 acres of vacant land listed by the San Diego County Assessor (2024) for

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[1] School gardens (unless managed by the community and open to the public) are excluded as are educational gardens not focused on food production. We were unable to study the 25 remaining sites because we were denied access (n=3) or unable to reach a manager to obtain permission (n=22) despite multiple attempts.

the urbanized area. If all this land were cultivated, production could increase from an estimated 750,000 pounds of fruits and vegetables from existing gardens to 500 million pounds, feeding as many as 2.6 million people,[2] which is less than the total population of 3.6 million but well above the 365,000 struggling with food insecurity according to the San Diego Hunger Coalition (2024). In vulnerable areas alone there are 2,621 vacant parcels, averaging 0.88 acres each. This could generate 56 million pounds of food and feed almost 300 thousand people.

Of course, the assumption that all vacant land could be cultivated in unrealistic for several reasons, including terrain and soil characteristics, lack of water, and owners' priorities. Owners of vacant properties often keep their land undeveloped in anticipation of future gains from development or sale. Renting to community farmers is rarely seen as a profitable option and may interfere with the owners' ability to respond quickly to market trends, which may explain why only one landowner in the County has taken advantage of the much-touted 2016 Urban Agriculture Incentive Zone program granting property tax exemption to those giving growers access to their vacant land. Thus, despite an abundance of vacant land, land tenure is one of biggest sources of stress for the gardeners, a finding confirmed by our interviews. In the past decade, at least a dozen gardens –many in vulnerable areas– lost their land and had to close or relocate. Aside from its destabilizing effect on the community of growers, such events represent a major loss of investment in soil, which often takes years to build.

Contrary to expectations, our mapping analysis reveals that vulnerable areas have fewer vacant lots per thousand people and less vacant land per capita than the rest of the region, with 3.3 parcels per thousand (compared to 4.6) and 125 sq. ft. of land per capita (compared to 275). In addition, when searching for potential sites, community groups must consider soil contamination, especially for vacant industrial land, which may have been contaminated by previous occupants such as gas station, tire factory, metal works, and paint shop. In vulnerable areas, industrial land represents a much larger share of total vacant acreage –about 73 percent compared to 15 percent for the entire urban area. Very few public lots, which are the most common type of land used for urban agriculture, are also available. Among vestiges of industrial pasts, 317 sites have been designated as brownfield by the Environmental Protection Agency (EPA). More than a third of these "formerly industrial sites in which contamination prevents or limits future development" are in vulnerable tracts, reflecting well documented environmental injustices (Dillon 2014). Although these environmental risks do not preclude individuals from growing food, it requires additional investments such as testing soil, importing it form other places, amending it with compost and remedial plants, and building raised beds.

These environmental constraints are exacerbated by the fact that San Diego is one of the most unaffordable counties in the nation, with median home sale prices more than twice above the national average. Although the median assessed value of vacant land is slightly lower in vulnerable areas ($92,913 vs. $102,976), parcels are also smaller, resulting in a higher value per square foot of $2.44 (compared to $1.59 for the entire urbanized area). These figures suggest that, against common perception and despite higher environmental risks, land is less affordable in vulnerable areas than in more affluent places.

Land unaffordability in these areas is linked to gentrification, which has spread from the core to inner-ring suburbs, including areas identified here as vulnerable. In these places, property values have been rising rapidly and growers fear losing access to the land as owners consider more lucrative options. Ironically, urban agriculture has contributed to this process of gentrification (Joassart-Marcelli 2021), which is now threatening its very existence.

Growing Food and Healing Soils

Given these multiple challenges, it may not be surprising that gardens in vulnerable areas are smaller than those in more affluent and primarily suburban locations. Table 1 compares the

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[2] Estimates based on annual output per square foot of 0.56 pounds of produce (Algert et al. 2014) and annual per capita consumption of fruits and vegetable of 193.12 pounds (Statista 2023).

characteristics of gardens by area and shows that those in vulnerable neighbourhoods tend to be about 4 times smaller and therefore can feed fewer people – about 12 per year assuming that all fruits and vegetable needs are met by garden produce. These smaller gardens, however, are similarly or better equipped than other gardens, with composting facilities, seating space, tool sheds, and washing stations. This reflects the commitment of managers and growers to work together to create inclusive and functioning community spaces. Although garden managers in vulnerable areas have lower socio-economic status than other managers, they are more likely to be white and college educated than residents of the neighbourhoods where they work.

Table 1: Garden, Managers, and Neighbourhood Characteristics for Vulnerable Tracts Compared to Total Urban Area

Gardens	All	Vulnerable
Total	78	10
Average Size (sq. ft.)	17390	4258
Plant Diversity	36	26.5
Average Food Production (lbs.)	9704	2384
Average People Fed	50	12
Compost	77%	100%
Seating area	87%	100%
Drip	51%	50%
Mulch	72%	75%
Wash Station	49%	100%
Raised Bed	74%	50%

Managers	All	Vulnerable
College degree	86%	75%
Female	58%	25%
Non-White	26%	34%
Average Income	$133,233	$47,000

Neighbourhoods (Tracts)	All	Vulnerable
Non-White	56%	81%
Poverty Rate	26%	37%
Households in SNAP	10%	17%
College degree	39%	21%
Average Income	$90,495	$67,057

Source: Author with SDSU Community Garden Study (2023) and US Census (ACS 2018-2022 5-year estimates)

Some of the biggest differences, not captured in this table, relate to organizational management style, community participation, orientation towards food justice and racial equity, and challenges garden members have faced along the way. Gardens such as Mount Hope, New Roots, and Paradise Creek in the vulnerable neighbourhoods of Southeastern San Diego, City Heights, and National City are "food justice" projects that contrast sharply with gardens in more affluent communities. Located in historically segregated low-income neighbourhoods, they emerged primarily to address rampant food insecurity by providing low-income residents an opportunity to grow fruits, vegetables, and herbs. In addition, they have sought to address racial injustices that immigrants, refugees, and people of colour face in accessing affordable healthy food. They are run by community-based grassroots organizations that are led by and prioritize the needs of residents.

Discussion and Conclusion

Although planners and policymakers have begun paying more attention to the potential of urban agriculture, they have not fully acknowledged the social disparities that prevent community gardens to reach their transformative potential. In San Diego, as in many cities, municipal plans identify low-income and racially minoritized people as the primary beneficiaries of greening initiatives like urban gardens. Yet, little consideration is given to how community gardens come to existence. The data presented here illustrates how residents of vulnerable communities who seek to grow their own food face lower land vacancy, greater risks of soil contamination, higher land prices, and mounting gentrification pressures.

Those who succeed in surmounting these obstacles are well-connected grassroots organizations, who have allies in many sectors of the local food system but remain true to their justice priorities. Through community participation and alliances, they actively challenge their circumstances, heal the soil, and build small but mighty gardens that benefits residents.

This paper emphasizes the importance of looking at community gardens as "socio-natures" produced over time through human activities, flows of capital, and policy decisions that create the conditions for their existence rather than a "green fix" to revitalize vacant spaces.

Bibliography

Algert, S. J., Baameur, A., and Renvall, M. J. (2014) 'Vegetable output and cost savings of community gardens in San Jose, California', *Journal of the Academy of Nutrition and Dietetics*, 114(7), pp. 1072-1076.

Anderson, E. C., and Minor, E. S. (2017) 'Vacant lots: An underexplored resource for ecological and social benefits in cities', *Urban Forestry & Urban Greening*, 21, pp. 146-152.

Bosco, F.J.. and Joassart-Marcelli, P. (2017) 'Gardens in the City: Community, Politics and Place', In Antoinette WinklerPrins (Ed.), *Global Urban Agriculture: Convergence of Theory and Practice between North and South*, Boston: CABI International, pp. 50-65.

City of San Diego (2024) Draft Environmental Justice Element. Available at: https://www.sandiego.gov/sites/default/files/2024-05/ej-element-draft.pdf

Classens, M. (2015) 'The nature of urban gardens: toward a political ecology of urban agriculture', *Agriculture and Human Values*, 32, pp. 229-239.

Dillon, L. (2014) 'Race, waste, and space: Brownfield redevelopment and environmental justice at the Hunters Point Shipyard', *Antipode*, 46(5), pp. 1205-1221.

Drake, L., and Lawson, L. J. (2014) 'Validating verdancy or vacancy? The relationship of community gardens and vacant lands in the US', *Cities*, 40, pp. 133-142.

Egerer, M. H., Philpott, S. M., Liere, H., Jha, S., Bichier, P., & Lin, B. B. (2018) 'People or place? Neighborhood opportunity influences community garden soil properties and soil-based ecosystem services', *International Journal of Biodiversity Science, Ecosystem Services & Management*, 14(1), pp. 32-44.

Engel-Di Mauro, S. (2014) *Ecology, Soil, and the Left: An Ecosocial Approach*. New York: Palgrave Macmillan.

EPA. (2024). Assessment, Cleanup and Redevelopment Exchange System (ACRES) database. *EnviroAtlas*. Available at: https://www.epa.gov/enviroatlas/forms/enviroatlas-data-download

Granjou, C., and Meulemans, G. (2023) 'Bringing soils to life in the human and social sciences', *Soil Security*, 10, e100082.

Horst, M., McClintock, N., & Hoey, L. (2017) 'The Intersection of Planning, Urban Agriculture, and Food Justice: A Review of the Literature', *Journal of the American Planning Association*, 83:3, 277-295.

Joassart-Marcelli, P. (2021) *The $16 Taco: Contested Geographies of Food, Ethnicity, and Gentrification*. University of Washington Press.

Lovell, S. T. (2010). 'Multifunctional urban agriculture for sustainable land use planning in the United States', *Sustainability*, 2(8), pp. 2499-2522.

McClintock, N. (2010) 'Why Farm the City? Theorizing Urban Agriculture Through a Lens of Metabolic Rift', *Cambridge Journal of Regions, Economy and Society* 3 (2): 191–207.

Neidig, J., Anguelovski, I., Albaina, A., & Pascual, U. (2022) ''We are the Green Capital': Navigating the political and sustainability fix narratives of urban greening', *Cities*, 131, e103999.

Poulsen, M. N., Neff, R. A., & Winch, P. J. (2017) 'The multifunctionality of urban farming: perceived benefits for neighbourhood improvement', *Local Environment*, 22(11), pp. 1411-1427.

Reynolds, K. (2015) 'Disparity despite diversity: Social injustice in New York City's urban agriculture system', *Antipode*, 47(1), pp. 240-259.

San Diego County Recorder and Assessor's Office. 2023. Parcel Data. *SanGIS*. Available at https://rdw.sandag.org/Account/gisdtview?dir=Parcel

Slocum, R. (2007) 'Whiteness, space and alternative food practice', *Geoforum*, 38(3), pp. 520-533.

Statista. 2023. Per capita fruit consumption. Available at: https://www.statista.com/statistics/257127/per-capita-consumption-of-fresh-fruit-in-the-us/

Surls, R., Feenstra, G., Golden, S., Galt, R., Hardesty, S., Napawan, C., & Wilen, C. (2015). 'Gearing up to support urban farming in California: Preliminary results of a needs assessment', *Renewable Agriculture and Food Systems*, 30(1), pp. 33-42.

Swyngedouw, E. and N. Heynen (2003) 'Urban political ecology, justice and the politics of scale', *Antipode*, 35(5), pp. 898–918.

Tironi, M., Kearnes, M., Krzywoszynska, A., Granjou, C., & Salazar, J. F. (2020) 'Soil theories: Relational, decolonial, inhuman', In J.F. Salazar, A. Krzywosynska, M. Kearnes, and C. Granjou (Eds.) *Thinking with soils: Material politics and social theory*, 15-38, Bloomsbury.

Tornaghi, C. (2014) 'Critical Geography of Urban Agriculture', *Progress in Human Geography*, 38 (4), pp. 551–567.

Wesener, A., Fox-Kämper, R., Sondermann, M., & Münderlein, D. (2020) 'Placemaking in action: Factors that support or obstruct the development of urban community gardens', *Sustainability*, 12(2), pp. 657.

Post-Growth Metabolism: Rethinking Urban Planning and the role of Open Municipal Markets

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Post-Growth Metabolism: Rethinking Urban Planning and the role of Open Municipal Markets

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Global agrifood system is one of the major forces of climate change, ecological disasters and rural decline. These threats call for taking action in climate change mitigation effects, making urgent to rethink the role of urban planning in food provision. In post-growth metabolism era reformulating the interconnections of the spaces of the food chain, especially the productive areas and food retailing spaces, becomes imperative to shorten the spatial distribution of food supply and maintain a capillary food distribution, preventing concentration of the main food chain. This contributes not only to reduce "foodprint" but to construct inclusive foodscapes, by enhancing the access to healthy food for a wider range of population and giving new jobs opportunities in rural areas. The proposed perspective integrates urban and territorial scales, exploring connections between food production areas, producers' residences, and open municipal markets (OMM). The developed research within the framework of the project "PECT Girona, food sustainable system" (2021-2023) has analysed the food ecosystem that constitutes the 105 OMM by: a) GIS data analysis in a regional scale; b) urban analysis of 60 selected OMM in a urban scale,; and c) statistical analysis of 300 interviews to the markets' stallers, about the origin of the offered food products and the interrelations between markets according to the routes of the stallers. The analysis was developed based on the inductive hypothesis of 8 food clusters that were identified crossing socioeconomic and geographical conditioners. The main results show that especially during post-covid times there has been a decrease of local farmers and producers that sell in OMM, having the food re-sellers a major presence in OMM. This has a direct effect on the origin of the sold product and in the extension of productive land-use that is finally managed. Comparative cases in mountain, coast or inland clusters show differences in OMM models and the productive capacity of the areas. Also, tendencies in concentration areas of local farmers and OMM that promote them. Addressing the issue relationally suggests that the OMM model can benefit local consumers and farmers, aligning with degrowth metabolism principles: distribution, regeneration, and care. The study emphasizes that OMM, as public facilities, serve as urban planning levers for food chain relocalisation, fostering spaces of sufficiency and care that promote food chain sustainability.

Keywords: Open Municipal Markets, food chain, urban planning, post-growth metabolism.

Introduction

The post-growth metabolism is proposed as an approach trying to respond how to achieve agri-food system transformation to sustainability, since most of the presented strategies of change to date, are insufficient. Immersed in the context of climate emergency, global agri-food systems are major drivers of the transgression of planet boundaries (Campbell et.al, 2017). The situation urgently requires reconceptualising human food metabolisms according to values, food practices and lifestyles that strive for sufficiency over efficiency, regeneration over extraction, distribution over accumulation, commons over private ownership and care over control (McGreevy et al., 2022). Furthermore, the integration of ecological resilience when approaching the agrifood systems leads to focus on understanding qualities such as the local self-organization necessary for systems to withstand and overcome disturbances, as it is climate change (Worstell, & Green, 2017). This contributes not only in reducing "foodprint" but to construct inclusive foodscapes (Vonthron et al., 2020; Parham, 2015), by enhancing the access to healthy food for a wider range of population and giving new jobs opportunities in rural areas. Within this context, it is imperative to rethink the role of urban planning in food provision (Tornaghi & Dehaene, 2020) reformulating the interconnections of the spaces of the food chain, especially the productive areas and food retailing spaces like in the case of the Open Municipal Markets (OMM) functioning as a capillary food distribution system that prevents concentration of the main food chain (Fukuda, 2022). In this regard, at territorial and municipal scales, OMM play a critical social role in the economic and environmental sustainability of the agri-food systems, promoting distribution, commons, sufficiency and care,

minimising the social and geographical distance between communities of stallholders, producers, and consumers and creating a "food" community (Oteros-Rozas, et al., 2019) in the context of the "city of proximity" model (Gottero, 2019). Many approaches to OMM use to be city centered (Tornaghi & Dehaene, 2020), but from this metabolic and systemic perspective, references indicate the need to explore further the connection between food planning and the OMM in a multiscale approach, since urban food planning requires a multidimensional and multiscalar recoding to connect urban to food (Specht, et al, 2022). That is unveiling OMM's potential as complex public facilities linked to the local scale but with territorial logics as an opportunity to explore in depth how to advance towards food transition (Fava & Carrasco, 2023) from this post-growth perspective.

In the Province of Girona, OMM are most of them at risk to disappear because of the global consumption habits (e.g. e-commerce), other global market constraints (e.g. supermarkets, hypermarkets), and the lack of political local support. Other internal weaknesses are the lack of cooperation and association between stallholders, the unfair competition, the lack of confidence and collaboration between local administration and stallholders or the generational turnover, where on its top there is also the factor of diminishing sales caused by the post-Covid crisis and others. The primary hypothesis of this research is that in addressing the aforementioned challenges, Open Market Municipal (OMM) serve as territorial levers to advance the food transition considering two main dimensions: distribution and care. For this two dimensions we consider: the markets' threshold of the vendors and the origin of the sold food products. On this basis, this study investigates how OMM can contribute to the re-localisation of the food supply chain and the communal transformation of the food system by fostering an interconnected food community through a food infrastructure, which is constituted by market networks and the complementarities between OMM and agricultural production areas. Specifically, the research seeks to identify the most critical dimensions that facilitate this transition. The research assumes that there exist territorial relations between clusters of OMM, especially from the proximity perspective, able to structure them in relation to: a) the local farmers and producers; and b) their potential to stablish synergies between municipalities, providing opportunities for territorial complementarities and increasing diversity options for the market's users. Thus, beyond a general overview of the whole markets ecosystem, a comparative analysis for each cluster have been developed to identify commonalities and particularities for each of the types and cases and possible complementarities that enable a networked understanding of the OMM ecosystem.

Methodology

The methodology aims to debate if it is possible to conceive the markets as a networked ecosystem at three scales (regional, cluster and urban), being the OMM stretchily close to the social and physical territory of each municipality. It also aims to determine which relation exist between stallholders and the territory considering three main dimensions: their residence location, the origin of the food products they sell, and which are the markets they visit during the week. The general methodology proposes a mixed research method, combining qualitative and quantitative methods, and a case study research that is the consumer-producer ecosystem conformed by 105 OMM and 9 covered markets in the Province of Girona, because of its density and diverse socio-physical context that allows to identify different markets models. From the last two decades, both markets types are suffering an important regression, losing stalls and progressively disappearing from the society's imaginary as a food retailing alternative to supermarkets, disregarding their contribution to health, social cohesion, decarbonisation of the food system, promotion of healthy and sustainable habits, etc. Also, the particular context of the Province of Girona, with coast, mountain and inland rural areas, all them with a huge impact of seasonal tourism, entails a variation of potential consumers that generate direct effects to the OMM system functioning along the year.

To develop the research, several data sources have been used, like open data repositories and GIS data bases, direct source data from local public administration extracted from

individual interviews. Nevertheless, the principal information source was 300 semi-structured surveys with stallholders taken during the in-site visits and open observation of 61 OMM (the 57% of the total). The main objective of these visits was to study in depth the context observing the interaction between consumers and stallholders in relation to the type of sold food product. Also to recognise the particularities of the different markets to search for similarities between them, according to various issues (location based on the cluster type, urban location, major type of vendors, profile of consumers, diversity of sold products, and diversity of stalls type, among others). On the other side, the 300 surveys have allowed to determine: a) the profile of the stallholders (type of stallholder (reseller or producer), association level, stall's age, sex, age, family business, etc.); and b) the profile of the stall (product provenance, level of self-production, diversity of products, the markets they have during the week, organic production, etc.). The compiled qualitative data has been analysed combining statistics and GIS analysis.

On this basis, four type of clusters and a total of 16 clusters have been identified, adopting geographical criteria to easily name them: mountain, coast, inland-coast and inland clusters. The clusters have been defined considering four principal criteria, combining the geographic and socioeconomic approach: the orography conforms socio-territorial areas of relation between municipalities that also facilitate the connection between OMM; accessibility and connectivity through roads network; areas of attraction and influence around some important market centres (usually corresponding to capital municipalities), enabling the cooperation with other public facilities and urban services; and people and products flows that in some way organise the vendors (resellers and producers) and create a dense connections network between the main retailing nodes (Nordin, 1983). Demography was not considered as an explanatory variable due to its variability, being tourism and seasonal population factors of important demography variations in some of the areas.

Results

The graphics in Figure 1 show that the 56% of the responding stallholders are resellers, while the producers (with 60% or more of own production) represent the 30% of the respondents and the producer-resellers (those who sell less than the 60% of own production) are the 12%. In the case of producers and producers-resellers, the ones that have 80% of own production are the majority. In the case of resellers, the ones who get the products in wholesale markets like MercaBarcelona or MercaGirona are the 29%, very close to the Dealers that represent the 24%. Only the 12% sell products that directly come from producers and farmers. This representative sample that covers the 75% of the total amount of stallholders, were found in 61 OMM of the 105 in total.
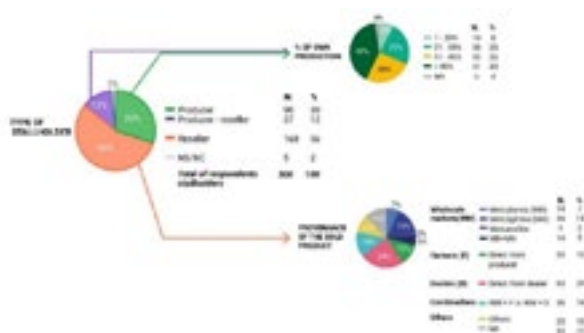

Fig 1. Graphics of the type of stallholders and origin of sold products. Source: By the authors.

Complementarity between stallholders' provenance and productive areas

The analysis of the stallholders' provenance (municipality of residence) allowed to determine areas of concentration of producers and resellers as well as the localisation of specific type of stallholders in relation to the analysed cluster (Fig.2). Stallholders principally have their residence in the Province of Girona. The clusters of la Selva plain (SE1, SE2) concentrate the major part of stallholders that come from other areas outside the province because it is closer

to the Province of Barcelona and some important productive areas like Maresme or Vallès Oriental. In contrast, the inland-coast (BE1, BE2) and la Garrotxa clusters (GA1, GA2, GS1) concentrate a major number of producers of the cluster area. On the contrary, resellers are more scattered along the whole Province, although Girona and Figueres are areas of concentration of these type of stallholders.

Inland-coast, Coast and Mountain clusters concentrate producers in their areas of proximity, although the variations in the model of market entails a different reason for each case. In several OMM like Puigcerdà, Ripoll, l'Escala, Calonge, Palafrugell o Palamós, the municipality aims to promote local producers and the local products of the area because the market is conceived more from a touristic perspective, knowing that tourists especially value the local products and the experience of the market as a place of encounter with local farmers. In that cases, the concentration of producers that stay in the same market, even daily, is high. In some municipalities that have public built markets, the daily presence of farmers in stalls surrounding the built market is a tradition and goes beyond this tourist promotion aim. In the specific case of Inland-coast markets, the territorial coverage of the producers outlines a direct connection of close markets with similar principles, type of location and conditions. Following this direction, in the case of mountain markets, the producers tend to cover less area, remaining in the cluster or even in the same single market. There exist a correlation between these markets and the nearby productive area. Two clear examples of vegetables production areas are the case of Palamós, Calonge and Vall-llobrega, and the Tordera plain. In both cases the "product of proximity" label is a recognition for the producers and guarantee some advantages for them as stallholders. Mountain clusters are more characterised for the production and elaboration of animal-origin products (cheese and meat), and local varieties of vegetables and other food products (honey, mushrooms, aromatic plants, beans, etc.).

Territorial distribution of the stallholders and the question of connectivity

According to Figure 2, in general, stallholders tend to approach the coast markets, but in the case of inland and mountain areas, the tendency is to enlarge the territorial coverage. Producers tend to make shorter and closer routes and less markets during the week because they invert time in farming and producing. On the contrary, resellers tend to visit more markets (in some cases, more than one per day) and they cover a wider area. They usually seek for big-size and rentable markets, like the ones of capital municipalities or in touristic areas. Specific examples of these situations are Cerdanya and Ripollès (Mountain clusters) and la Selva, that enlarge towards the Province of Barcelona for the easy road connections. The rest, have a tendency more related to enhance the relations between the markets of capital municipalities (Olot, Girona, la Bisbal d'Empordà or Figueres, respectively). In the case of Mountain clusters, the territorial coverage of the stallholders is quite more limited that in the other cases because the isolation of the area. In this regard, the proximity relations between markets it is generated both from producers and resellers, since in this area the stallholders tend to visit less markets during the week than in other cases.

Stallholders and products' provenance: the care dimension

In general, the product of proximity is produced in the same Province of Girona. Nevertheless, and according to each cluster, it can be determined that the most presence of resellers, the furthest is the provenance of the sold products. One example is la Selva cluster, with markets with no presence of local farmers and products that come from distant wholesale markets (Mercavallès and Mercabarcelona) and other areas of Catalonia, especially Maresme. Thus, in the clusters with a major presence of resellers and a wider territorial coverage, the distribution is less sustainable because the products come from further areas. In that cases, there is not a direct connection between the productive areas of proximity and the products' provenance. In consequence, and from the conception of care, there exist producers-consumers interdependences within local even global food networks (McGreevy et al., 2022). While producers contribute to short distribution paths and this direct connection between the consumers and farmers, sharing knowledge and creating this space of mutual confidence and

safety, valuing farmer's work and the quality of the products; resellers increase the diversity in the food products' offer and provide different ranges of quality and prices, ensuring the access to fresh food products to the whole population.
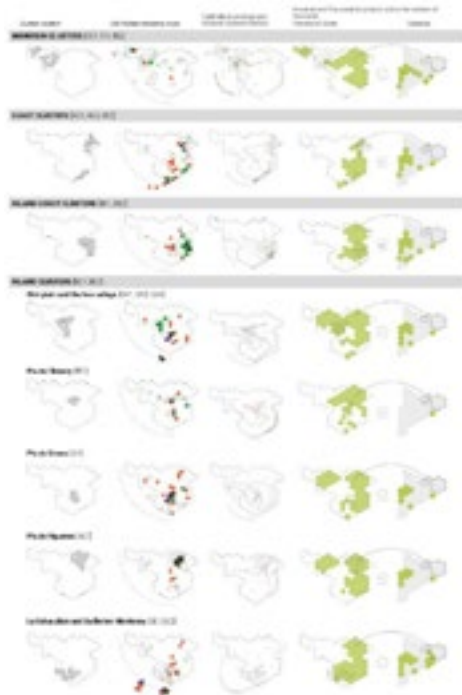

Fig 2. Comparative analysis between clusters. Source: By the authors.

Discussion and conclusions

The OMM ecosystem in the Province of Girona has a great extension, with an adequate coverage along all the province, but it lacks structure. The results show tendencies that vary according to the clusters particularities, and although the evidences provided by stallholders territorial coverage, it does not exist a regional strategy to foster OMM in a supramunicipal and interconnected level.

Pursuing the principles of the post-growth metabolism approach, the OMM that promote local farmers may function as urban levers with regional interconnections able to enhance distribution, fostering localised food economies rooted in the landscape (McGreevy et al., 2022). The capillary condition of OMM ecosystem contributes to an accessible and distributed commercial network along the province of Girona that present opportunities for territorial complementarity beyond the urban scale. However, the important presence of resellers that buy the products in wholesale markets, still contributes to the concentration of the food chain. The concentration of producers-stallholders (especially organic producers) in some areas and their relation with the surrounding markets contribute to adjust consumers' demand to the productive capacity of the local area. The short-distance coverage of this stallholders also contributes to the decarbonisation of the local food system. Although very few examples exist in the studied area about directly connecting OMM and local food productive area, the farming surface has reconversion potential to contribute to human's food sovereignty (Callau, 2022). So in this process, OMM may play a fundamental role in the re-territorialisation of food production, fostering local producers, distribution, and proximity food products. Exploring the productive capacity of the land in that sense, searching for the interconnection with the OMM ecosystem, may bring the debate into new significant insights worthy to be explored. Considering the question of care, although the undeniable contributions of local farmers, it is necessary that the markets maintain a balanced diversity of stallholders to make the OMM ecosystem accessible to the whole population, regardless of their income, ethnic group, gender, age, disability, etc. Diversity contributes to the increased complexity and the resilience

of the system, consolidating inclusive foodscapes capable to re-gain a place in people's imaginary. In relation to that, an open question to further discussion is which kind of policies are able to provide and keep this diversity in balance without compromising the viability of local producers businesses and, in consequence, the model of the market.

To conclude, the results indicate that there exist a multiscalar (regional, cluster and urban) interconnected functioning of the OMM ecosystem*,* since the socio-economic, socio-cultural, urban and ecological dimensions are determinants in the case of the OMM. To achieve its consolidation, it is necessary to implement strategies that potentiate the complementarity and the socio-territorial relationships between municipalities and clusters, as well as to reinforce the role of the existing markets both in local and regional scale. In order to reconnect the OMM with the surrounding productive space of proximity is necessary to implement policies that promote local farmers and stablish joint strategies with the markets (at least) of the same cluster. OMM as public facilities, contribute to food chain relocalisation, fostering spaces of distribution and care that promote food chain sustainability.

Bibliography

Callau, S. (ed), (2022), *Alimentem Barcelona. Guia pràctica per impulsar estratègies alimentàries locals*. Barcelona, Diputació de Barcelona.

Campbell, B. M. et al. Agriculture production as a major driver of the earth system exceeding planetary boundaries. *Ecol. Soc*. 22, 8 (2017).

Fava, N. & Carrasco, M., 2023. *Els mercats no sedentaris a la província de Girona: una oportunitat per la transició alimentària?* Report. https://dugi-doc.udg.edu/handle/10256/24177

Fukuda, S. (2022). From Uniformity to Diversity. *The Proceedings of Design & Systems Conference*, 2022.32(0), 1208.

Gottero, E. (2019). *Agrourbanism. Tools for governance and planning of agrarian landscape*. Springer International Publishing.

McGreevy, S.R.; Rupprecht, C.D.D.; Niles, D.; Wiek, A.; Carolan, M.; Kallis, G.; Kantamaturapoj, K.; Mangnus, A.; Jehlička, P.; Taherzadeh, O.; Sahakian, M.; Chabay, I.; Colby, A.; Vivero-Pol, J.; Chaudhuri, R.; Spiegelberg, M.; Kobayashi, M.; Balázs, B.; Tsuchiya, K.; Nicholls, C.; Tanaka, K.; Vervoort, J.; Akitsu, M.; Malle, H.; Ota, K.; Shinkai, R.; Khadse, A.; Tamura, N.; Abe, K.; Altieri, M.; Sato, Y.; Tachikawa, M. (2022). Sustainable agrifood systems for a postgrowth world. *Nature Sustainability*, Vol.5, 1011-1017.

Nordin, C. (1983). *Marchés commerçant clientèle. Le commerce non sedèntaire de la region parisienne*. Gothemburg, Cinor.

Oteros-Rozas, E., Ravera, F., & García-Llorente, M. (2019). How does agroecology contribute to the transitions towards socialecological sustainability? *Sustainability*, 11, 4372. https://doi.org/10.3390/su11164372

Parham, S. (2015). Food and urbanism: The convivial city and a sustainable future. Bloomsbury.

Specht, K.; Bohn, K.; Simón-Rojo, M. (2022). Planning food system transitions: Exploring spatial, citizen-driven, and agroecological approaches. *Urban Agriculture & Regional Food Systems*. 2022;7:e20029. https://doi.org/10.1002/uar2.20029

Tornaghi, C. and Dehaene, M. (2020) The prefigurative power of urban political agroecology: rethinking the urbanisms of agroecological transitions for food system transformation, *Journal of Agroecology and Sustainable Food Systems*, vol. 44, no. 5, pp.594-610.

Vonthron, S., Perrin C. and Soulard, C. (2020). Foodscape: A Scoping Review and a Research Agenda for Food Security-Related Studies. *PLOS ONE* 15(5).

Worstell, J., & Green, J. (2017). Eight Qualities of Resilient Food Systems: Toward a Sustainability/Resilience Index. *Journal of Agriculture, Food Systems, and Community Development*, 7(3), 23–41. https://doi.org/10.5304/jafscd.2017.073.001