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OPINION / GÖRÜŞ

Addressing Fragmentation In City-led Food System Strategies: Insights from the Fusilli Project

Şehir Liderliğindeki Gıda Sistemi Stratejilerinde Parçalanmanın Ele Alınması: FUSILLI Projesinden İçgörüler

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Introduction

The urgency to transform urban food systems stems from global challenges like rapid urbanization, climate change, food insecurity, and social inequality – complex issues termed "wicked problems". With over half of the world's population now in urban areas and cities continuing to expand (UN, n.d.-b), urban centers are projected to consume substantial resources, including food. Food systems contribute around one-third of anthropogenic greenhouse gas emissions (IPCC, 2023), and causing major environmental issues destabilizing planetary boundaries (Campbell et al., 2017). These environmental impacts highlight the necessity for cities to lead transformative changes within the food sector.

The EU Horizon-funded FUSILLI Project addresses this issue by positioning cities as key agents for sustainable urban food system transitions (CORDIS, 2020). Although cities have been recognized as potential agents of positive change in previous research and initiatives, comprehensive methodologies engaging city actors are still lacking. Structured approaches, such as FUSILLI Project outcomes, are essential to help cities design and implement effective food policies that align with climate adaptation and sustainability goals.

Cities' involvement in food systems is fragmented, with responsibilities spread across municipal departments, making a unified approach difficult. Limited resources and a reluctance to take leadership further hinder collaboration. These challenges highlight the need for cities to embrace their complex role and overcome barriers to transformative change. Despite uncertainties around cities' roles in the food system, they indeed are key players in driving the transformation towards sustainable urban food systems (Magarini & Porreca, 2019). This role can be understood through dimensions of policy and planning, acting as innovation hubs, forming partnerships and networks, and engaging citizens. This letter addresses the challenges cities face beyond the "low-hanging fruits" of climate action as they strive to meet carbon neutrality targets, sustainable development goals (SDGs) (UN, n.d.-a) while keeping transition just and fair (Kaljonen et al., 2020).

Drawing from the FUSILLI Project Knowledge Community activities in Southern Finland, this letter offers actionable strategies from a Nordic perspective and thus contributes to urban food planning literature. Although the characteristics of cities – ranging from readiness in food system strategies, rural-urban linkages, population and geography to political

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contexts – vary, our findings offer relevant implications for advancing urban food systems transformation.

Dialogue and Translocal Learning Engaging Cities Driving Food System Change

The FUSILLI Project facilitated workshops to engage representatives from city-related organizations to address the barriers to sustainable food systems. These workshops brought City of Tampere (a FUSILLI partner city) together with representatives from other Finnish cities and city-owned organizations. The workshops were part of the FUSILLI Knowledge Community, which aims to disseminate best practices and empower food system actors to innovate and develop long-term urban food planning strategies.

Workshop participants, primarily involved in climate and environmental roles, faced a shared challenge: Finnish cities have limited control over the agri-food system, often relying on project-based approaches rather than direct governance. Pre-workshop interviews were conducted to identify key questions and stimulate critical thinking on urban food system transformation. A central question emerged: *How can cities drive food system change when their role is unclear?* This question served as the foundation for further discussions and reflections during the workshops.

Policy and Planning

Urban food systems are complex, with unclear responsibilities often leading to avoidance by city organizations. Food-related challenges span multiple city service units, making integration into strategic plans essential for effective management. Without clear policies, food system efforts become fragmented, reliant on individual leadership for progress.

Through the FUSILLI Project, City of Tampere began mapping its role in urban food system transformation by reviewing strategies and programmes related to food. While food is not explicitly mentioned in the city strategy, Tampere has action plans and programmes that overlap with food system sustainability. These action plans and programmes are a derivative of the Tampere City Strategy and contain concrete measures to promote sustainable food transformation. These action plans and programmes are: Climate Neutral Tampere 2030 roadmap (City of Tampere, 2022b), Carbon neutral actions' development programme (City of Tampere, 2024d) Circular Economy Plan (City of Tampere, 2024c), Poverty Plan (City of Tampere, 2023b), Child and Youth Welfare Plan (City of Tampere, n.d.) and Pirkanmaan Voimia Ltd. (city-owned in-house food service company) Environmental roadmap (Pirkanmaan Voimia Ltd., n.d.). FUSILLI Project implemented concrete food-related pilots and activities to the action plans and programmes. These activities introduced connections to food system to different city units and responsibilities.

Tampere has pioneered accounting for consumption-based emissions, with food contributing 23% of the city's emissions (City of Tampere, 2024b). However, a key barrier remains the exclusion of consumption-based emissions from cities' CO^2 neutrality targets. Cities need to adopt systems thinking and include food production and consumption in their climate policies, emphasizing CO^2 footprints, biodiversity impacts, and social responsibility.

Finnish cities face challenges due to limited control over the agri-food system and retail, which are mainly managed by private businesses. As citizens' food consumption is viewed as a private choice, municipal control is largely limited to public food services. Municipal involvement in public food services has weakened with recent reforms, such as transferring social and healthcare services to wellbeing service counties, further distancing cities from local food agendas. Additionally, Finland's centralized food system (Karttunen et al., 2019) reduces cities' influence over the food consumed locally, as much of it is sourced from outside the region.

Within FUSILLI, Tampere has identified its role in urban food planning across all the city-units and operations. As a result, the city has been recognized as urban food planning actor in multiple areas such as land use (urban gardening; residents' connection to nature), health and well-being (park meals for children), and public services (food education in schools and early childhood care), subsidiaries (procurement practices of public meal services) as well as expert organization for tourism, events and congresses (food as a part of experience economy). However, some food-related responsibilities are often fragmented, such as in food aid, complicating coordination.

Reviewing strategic management system of the city thoroughly is one of best practices recognized. Developing a food culture strategy is another key opportunity, but – at least in Finnish context – such strategies are still rare and often lack clear direction.

Innovation Hubs

Innovation hubs, living labs and other participatory infrastructures play a pivotal role in transforming urban food systems by fostering collaboration among diverse stakeholders. City living labs have been a core of the FUSILLI Project, driving innovation in urban food systems. These labs provide experimental environments where cities can test new ideas, technologies, and policies in real-time. Labs engage various stakeholders –government, businesses, researchers, citizens, and environmental representatives – to co-create and test solutions in real-world settings (ENoLL, 2017). When setting up city-led structures for innovation, the natural environment should be treated as a stakeholder to recognize the value of natural capital (Mäkelä et al., 2019; Pelenc et al., n.d.).

Living labs generate practical insights that can inform city planning and food system transformation. Cities must acknowledge their value in addressing complex challenges like climate change and social equity, enhancing residents' quality of life. Investing in sustainable innovation infrastructure is crucial for their continuity and ensuring that data from these experiments will be integrated into decision-making processes.

In Finland, a centralized food system dominated by two major retail operators creates an imbalance, limiting consumer choice (Kallio & Houtbeckers, 2022). While small and medium-sized enterprises (SMEs) exist within the food system, alternative food networks remain niche, and SMEs struggle to scale and compete.

A significant barrier for SMEs identified in Knowledge Exchange Workshops is the rigid structure of marketplace contracts, typically favoring larger businesses. SMEs engaged in part-time or small-scale production often find long-term contracts challenging. Participants emphasized the need for more adaptable terms to accommodate smaller operators, enhancing their access to urban marketplaces and fostering local food innovation.

Urban development plans should include infrastructure for small food operators, enabling alternative food networks and urban food hubs to thrive. This proactive approach promotes entrepreneurship and increases the availability of locally produced, sustainable food.

Urban food system transformation requires not just financial resources but also a focus on food literacy and reconnection to nature. Innovation may flourish via urban food hubs, alternative food systems like community-supported agriculture, and urban gardening initiatives. Educational initiatives, such as school garden visits, can strengthen urban populations' connection to sustainable food systems.

Partnerships and Networks

One key policy recommendation that emerged from FUSILLI Project and was emphasised in the workshop is Milan Urban Food Policy Pact (MUFPP) which City of Tampere (Tampere Signs the MUFPP, 2024) and other FUSILLI Cities have recently signed. MUFPP is an international framework, designed to support sustainable food systems in urban areas. By signing the MUFPP, city leaders and officials would have a concrete tool for ensuring long-term urban food system transformation beyond the lifespan of the projects and election cycles. This document is essential for maintaining momentum and continuing the conversation about food systems, regardless of political changes. In addition, MUFPP encourages stakeholders of the cities to participate in food system sustainability transformation.

Apart from MUFPP, there are indeed other significant networks and commitments, in which food is related in different ways. To promote bringing food system sustainability theme to city agenda mapping of existing memberships and commitments is useful. For example, FUSILLI City Tampere is committed to Climate City Contract (City of Tampere, 2024a), Sustainable Development Goals (SDGs) (City of Tampere, 2022a) and declared as a Fair Trade City (City of Tampere, 2022c). When the Cities are considering taking part to new networks and commitments in terms of food system sustainability, we recommended to choose initiatives, which succeed in engaging as versatile selection of city units and operations as possible.

Citizen Engagement

Citizen engagement is crucial for urban food system transformation, fostering public awareness, accountability, and support for sustainable policies while empowering residents to shape local food environments. We encourage exploring initiatives that ensure food system interventions are inclusive and responsive to urban populations' diverse needs.

Cities cannot transform their food systems by isolating food as an issue. Even if food is not explicitly mentioned in city strategies, it should be integrated across all responsible sectors due to its deep connections with urban wellbeing. For instance, the driving force behind food system transformation may be the quality of life that food enhances. Workshop participants highlighted that communality, wellbeing, and informal volunteering –the fourth sector (Rask et al., 2020) – are fundamental to a fulfilling living. Cities need to preserve urban spaces free from consumerism. Examples include the role of school meals improving learning outcomes, social dining promoting community cohesion, park lunches reducing inequality, and urban gardening fostering a connection to nature. These examples illustrate the importance of embedding food considerations into urban policies and programs, allowing food to act as a catalyst for positive social, environmental, and economic outcomes.

Transitioning to a sustainable society requires individuals to embrace new roles, as illustrated by prosumerism, where citizens participate in both consumption and production across sectors and knowledge building (Khan & Speed, 2019). Urban gardening exemplifies prosumerism, connecting citizens to food production while enhancing urban livability and nurtures connections between rural-urban linkages. City organizations can play a pivotal role in enabling new value creation in future food systems.

The Nordic countries' developed education systems, high civic literacy, and flat social hierarchies create a framework conducive to extensive citizen engagement (Koskimaa et al., 2024; Kangas & Kvist, 2019). Related to strategic goals of

the City of Tampere, the Participation and Community Involvement Plan (City of Tampere, 2023a) implementation supports community-based actions and the city to act as trusted partner for different communities.

Discussion

Food intersects with multiple city services, units and subsidiary companies, requiring systemic thinking and integrated action. Public food services, urban planning, education, social care, and environmental services all play roles in advancing food system goals. To foster this shared vision, cities need to establish platforms for dialogue and co-development between government, residents, and businesses. Innovation hubs and city living labs were highlighted as important tools for creating trust and aligning objectives.

Knowledge Exchange workshop participants also warned of the cost of inaction, noting that delaying sustainable solutions due to high initial costs would lead to far greater long-term financial, social, and environmental consequences. Recent literature supports this view, stressing that early investment in sustainability yields long-term benefits, enhancing resilience and reducing future crisis costs (Dreyer, 2024; OECD, 2008). Financial barriers must be overcome to avoid escalating public health and food security issues in the future.

Further research is needed on cross-sector collaboration models and how city departments can integrate food system thinking into their policies. Additionally, there is a need to investigate how businesses, especially SMEs, can be encouraged to engage in sustainable food practices. Regional development organizations must coordinate efforts to bridge rural-urban linkages, creating business opportunities and strengthening local food systems. Cities can leverage insights from academic research and collaborations to build more inclusive networks that drive food system transformation.

Participants expressed strong inner motivation to work towards sustainable urban food systems, driven by a vision of livable cities. They felt a responsibility to contribute using their skills and networks. The politicized nature of the food system question in the Finnish context (Niemi, 2024) makes dialogue and innovative solutions even more crucial. As one participant noted, "Current unsustainable practices must change very soon, which is kind of comforting." There is a sense that food system transformation is gaining momentum, with the right time for action approaching.

Conclusion

The workshop underscored the importance of multi-stakeholder collaboration, policy frameworks (such as MUFPP), and proactive investment in sustainability. Urban food systems are deeply complex, requiring cities to adopt long-term, system-based strategies that integrate food into broader agendas. Cities have a key role in supporting alternative food systems and short supply chains and must act as enablers rather than passive communicators.

Despite ambiguity in development pathways, the following actions are recommended for city agendas:

- Promote green transition: Map and prioritize food system actions within green transition strategies, contributing to planetary wellbeing.
- Enhance social welfare, address inequality: Strengthen efforts related to school food, food education, food aid, and community building, particularly in underserved areas.
- Leverage economic potential: Use food-related initiatives, such as gastronomy tourism, placemaking, and experience economy, to enhance city attractiveness.
- Facilitate knowledge exchange: Enable urban actors to share successful practices and policies, encouraging intercity cooperation and dialogue.

By taking these steps, cities can collectively advance towards more sustainable food systems that not only meet the needs of their residents but also contribute to broader environmental goals. The actions outlined above foster communities that are informed, engaged, and empowered to shape their food futures.

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