Integrating strategies for Budapest and Lisbon's sustainable, healthy, and resilient food systems. Lessons learned and steps forward

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Abstract. This work relies on the experiences gathered from urban food planning policy design in two European city regions, Lisbon and Budapest, considering urban and peri-urban food production landscapes as the basis for systemic approaches. Data analysis comprised four complementary approaches: 1, a desk research phase (narrative literature review and historical analysis of food policies affecting the city regions); 2, qualitative interviewing with different groups of stakeholders (including, for instance, city administration representatives); 3, city-regional and district-level food environment mapping activities with representative stakeholders, with a considerable proportion of vulnerable groups from two neighbourhoods; and 4, two workshops extending to a visioning, system understanding and a strategic planning phase. Results suggest different ways and derives to integrate local food policy measures into current planning policies. Although food policies and planning are best done through integrated approaches holistically addressing multiple purposes and potentially conflicting urban planning agendas and strategies, they are a rarity for many reasons. Nevertheless, it will be pointed out how currently available urban planning practices can enable a food planning policy and strategy that integrates social, economic, cultural, climate, and biodiversity-related policies. Current good practices for innovative urban planning policy measures will be discussed using the FoodCLIC project's assessment framework, proposing an integrated approach to transform urban food systems and environments in the European food transition framework.

1. Introduction

Urban food planning has emerged as a critical area of focus for cities worldwide in the quest for sustainable, healthy, and resilient food systems. This study explores the integration of food policy measures into urban planning in two European cities, Budapest and Lisbon. These city regions provide contrasting yet informative case studies on how urban and peri-urban food production landscapes can serve as foundational elements for systemic approaches to food system planning.

Our current global food systems are characterised by complex production, distribution, and consumption networks that have evolved significantly over the past century (Clapp, 2020). Driven by complex interactions between environmental, social, economic, and political factors, the food system now faces several critical challenges. Innovation in food systems is imperative to address these challenges, requiring a re-evaluation of land use practices. This includes prioritising the enhancement of plant production, reducing reliance on animal husbandry, and preserving soil health and biodiversity (Tilman and Clark, 2014).

Drawing on extensive experiences from urban food planning policy design, this study examines the specific strategies employed in Budapest and Lisbon. It leverages a multi-faceted data analysis approach, encompassing four complementary methods: a desk research phase, qualitative interviews with city administration representatives, city-regional and district-level food environment mapping activities, and two workshops focused on visioning, system understanding, and strategic planning.

The findings highlight diverse methods and pathways for integrating local food policy measures into urban planning policies. Despite the recognised need for holistic and integrated approaches that address multiple and potentially conflicting urban planning agendas, such strategies still need to be discovered (Morgan, 2009; Sonnino, 2016). Therefore, this study illustrates how current urban planning practices can be harnessed to develop food planning policies and strategies encompassing social, economic, cultural, climate, and biodiversity-related objectives.

Adopting systemic approaches to urban and peri-urban food production landscapes involves recognising and leveraging the interdependencies between urban development, food systems, and environmental sustainability. This integrated approach is essential for building resilient cities that can effectively meet the food needs of growing urban populations while safeguarding biodiversity and enhancing the overall well-being of both human and non-human actors.

Using the FoodCLIC project's assessment framework, this work discusses current best practices and proposes an integrated approach to transforming urban food systems. The lessons learned from Budapest and Lisbon provide valuable insights into the European

food transition framework, showcasing innovative urban planning policy measures that can drive the future of sustainable urban food environments. This study will compare the use of the FoodCLIC framework in two cities, and describe lessons learned during these processes, taking stock of specificities, needs, and resources mapped in each context.

2. The FoodCLIC Project and Assessment Framework

FoodCLIC1 is an EU-funded Horizon Innovation Action Project that started in 2022 and runs until 2027. The project's primary goal is to create resilient urban food environments across Europe. It takes action in 8 city regions, where municipalities and local research institutions work together to transform urban food environments and food systems to be environmentally sustainable, healthy, just, and accessible.

The framework's foundation is the CLIC concept, grounded in systems thinking and transformational learning. This concept was developed by Sonnino and Milbourne (2022) and presents an innovative and integrated framework designed to guide interventions in urban food environments that deliver sustainability Co-benefits, strengthen rural-urban Linkages, enhance social Inclusion, and foster new Connections between food and other complex systems. Therefore, it is a normative framework emphasising four key dimensions: social, environmental, spatial, and sectoral integration.

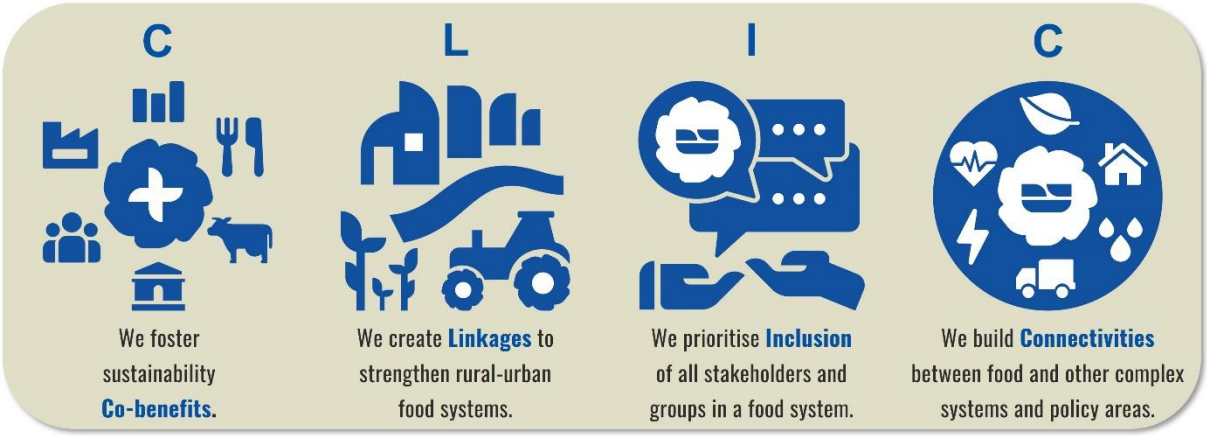

Figure 1. CLIC framework @FoodCLIC Project

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[1] FoodCLIC EU Horizon Innovation Action Project: https://foodclic.eu/ (accessed at 15.05. 2024)

In the subsequent section, we will introduce the four pillars of integration based on the project's proposal[2].

Co-benefits. The concept of ‘co-benefits’ acknowledges that sustainability strategies aimed at particular economic, social, or environmental objectives can positively or negatively impact other aspects of a system, leading to synergies or trade-offs. Considering co-benefits helps us to identify and address conflicts of interest among stakeholders with diverse viewpoints, fostering collaboration and alignment toward shared goals.

Linkages. Linkages encompass systems' dynamic flows, connections, and interactions, emphasising fluidity over rigid boundaries. This concept introduces a territorial dimension to co-benefits, highlighting the importance of (re)establishing or enhancing positive spatial, socio-cultural, economic, and environmental relations between communities and localities and bridging urban-rural divides. Viewing linkages underscores the interconnectedness between urban and rural areas, reframing the rural landscape as an integral and valuable component of urban spaces that requires protection rather than exploitation.

Inclusion. The concept of inclusion emphasises empowering diverse communities through increased participation, local leadership, and ownership of initiatives while highlighting the significance of knowledge pluralism. Knowledge pluralism involves leveraging diverse knowledge sources and their underlying values, providing valuable insights into transformative possibilities.

Connectivities. Connectivities refer to the physical and virtual relationships between our food consumption practices and broader public goods such as health, well-being, the environment, and the welfare system, all governed at various levels. Recognising the significance of these connectivities is crucial for addressing the rigidities, divisions, and gaps within the current system that hinder the development of integrated food policies. This awareness sheds light on the fragmentation of responsibilities across multiple departments, ministries, and state agencies and the power imbalances among actors within the food system and across governance levels.

This methodological framework behind the entire FoodCLIC project has guided research activities.

[2] FoodCLIC Project Grant Agreement No.101060717 - HORIZON-CL6-2021-COMMUNITIES-01

3. Methods

In this study, our primary goal was to compare the use of the FoodCLIC framework, which aims to create integrated strategies, in two different cities. We also described lessons learned during the process, taking into account the specificities, needs, and resources mapped in each context.

To achieve this objective, we adopted a comprehensive, multi-phase design that allowed us to analyse and understand urban food policies and environments thoroughly. Our methods were chosen to capture a holistic view of the urban food landscape, considering various dimensions and stakeholders involved. For that purpose, we used four complementary approaches, which are detailed below. While our approach encompassed multiple research methods, including desk research, food environment mapping, and workshops, we recognise the need to streamline our findings to effectively grasp the specific area of integration possibilities. Therefore, after a short introduction to the methods, this report will primarily delve into the outcomes focused on each case study.

3.1. Desk Research Phase

The first phase involved extensive desk research, including a narrative literature review and a historical analysis of food policies of the target city regions. This step aimed to gather existing knowledge and contextualise the current food policy landscape. The narrative literature review provided a broad overview of the academic and policy discourse surrounding urban food systems, while the historical analysis traced the evolution of food policies over time. This phase set the groundwork by identifying key themes, policy shifts, and historical influences that have shaped food environments in urban areas.

3.2. Qualitative Interviewing

In the second phase, qualitative interviews were conducted with representatives from city administrations. These semi-structured interviews aimed to gain in-depth insights into the perspectives and experiences of policymakers and administrators directly and indirectly involved in designing and implementing food policies. The interviews focused on understanding city administrations' challenges, successes, and future aspirations in managing urban food systems. This qualitative data enriched the study by providing nuanced, insider viewpoints on the practicalities of policymaking and implementation.

3.3. City-Level and District-Level Food Environment Mapping

The third phase involved city-regional and district-level food environment mapping activities. These mapping activities were conducted in two neighbourhoods per city region, characterised by a significant proportion of vulnerable societal groups. Representative stakeholders, including residents, community leaders, and food retailers, were engaged in mapping the local food environments. This participatory approach aimed to capture a detailed and localised understanding of food accessibility, availability, and quality within these neighbourhoods. The mapping activities highlighted spatial disparities and specific challenges vulnerable groups face, informing targeted policy recommendations.

3.4. Workshops: Visioning, System Understanding, and Strategic Planning

The final phase consisted of two workshops designed to extend the findings from the previous phases into actionable strategies. The workshops involved diverse participants, including policymakers, community representatives, researchers, practitioners, and other stakeholders. The first workshop focused on visioning and system understanding, where participants collaboratively developed a shared vision for the future of urban food systems and identified vital leverage points for change. The second workshop was dedicated to strategic planning, where concrete action plans were formulated based on the insights and visions generated. These workshops facilitated a collective approach to problem-solving and strategic thinking, ensuring that the proposed solutions were holistic and grounded in the realities of the local context.

The integration of these four complementary approaches provided a robust framework for analysing urban food policies and environments, leading to well-informed and contextually relevant recommendations.

4. Urban food planning policy in two European cities

Food policies and urban food planning are critical components of sustainable urban development. As cities grow and populations become more urbanised, ensuring food security, promoting healthy diets, and minimising the environmental impact of food systems are increasingly important. Effective urban food planning requires the integration of food policies into broader urban strategies, addressing issues such as food access, sustainability, and community engagement (Moragues-Faus and Battersby, 2021; Janin, Nzossié and Racaud, 2023).

This short comparative analysis examines the implementation of the FoodCLIC framework in two European city regions: Budapest and Lisbon. While both cities are

working towards improving their urban food systems, each context's characteristics imply differences and adaptations in their approaches, level of integration in food policies and urban food planning efforts, and community engagement strategies. By exploring these differences, this analysis aims to highlight the strengths and challenges of each city's approach, providing insights that could inform future urban food policy developments.

Budapest

Budapest's food policies are primarily shaped by national regulations, with local initiatives playing a supplementary role. The city has traditionally focused on agricultural policies due to Hungary's strong agrarian history. Budapest's urban food policy is less developed than other European cities, with limited strategic integration of food systems into broader urban planning frameworks. Budapest promotes and is recognised for its local farmers' markets, and city dwellers find it essential to support small-scale farmers and increase access to fresh, local produce. However, the impact of these markets is often limited to specific neighbourhoods, not fully addressing the needs of the entire urban population.

The city faces challenges related to food security, particularly for vulnerable groups. While there are initiatives to support low-income residents, such as food banks and social grocery stores, these efforts are often fragmented and need comprehensive policy backing. Environmental sustainability is an emerging focus, with efforts to reduce food waste and promote organic farming. However, the integration of sustainability goals into urban food policies remains in its nascent stages.

Budapest's urban planning has yet to fully incorporate food systems thinking. Limited coordination between urban planners and food policy stakeholders results in missed opportunities to create synergies between food production, distribution, and consumption within the city's spatial planning strategies.

Lisbon

The city of Lisbon has historically been fed by its hinterland, which supplied fresh food to the urban population until half of the 20th century. For this reason, when urban food planning started to be researched, it was done at the metropolitan scale (Oliveira and Morgado, 2016). In 2018, 38% of the land use of the Lisbon Metropolitan Area (LMA) was dedicated to agricultural, supplying 12% of Portugal's total food produced and consumed. However, the operation of this food system is not subject to any regulations in terms of spatial planning or land use management, and its impact on sustainability transition in the region still needs to be adequately known. How to drive food transition in the LMA, in which 18 municipalities are integrated, has thus arisen as a prominent question. In 2019, within a living lab context, the first steps were taken to this very challenging pathway, in which the definition of a food transition strategy was identified as

the priority to sow the seeds of a food planning process (Oliveira, 2022). In 2023, a Food Transition Strategy (FTS) was established to operate collaboratively and to co-define a set of long-term objectives according to a vision for 2030 and a collaborative action plan (Oliveira et al., 2023). The Lisbon Metropolitan Authority is part of several international networks, such as the Milan Urban Food Policy Pact, due to the influence of FoodLink. This food policy network was vital in influencing a strategic approach to urban food systems planning in which 40 public and private entities are currently involved and engaged in the FTS implementation.

This achievement in the regional context was also possible due to the influence of FoodLink in the regional strategic design, namely the Lisboa 2030 Regional Strategy, which has been in operation since 2020 as the primary guiding document for the regional food transition. It contributes to the objectives of cohesion and convergence in the country and 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 FTS pursues a multi-sector, multi-scale, and multi-actor approach, this policy tool should have a positive impact on restoring the dynamics of wealth creation and on internal and external regional cohesion, mainly through increasing dynamism between urban, peri-urban, and rural territories, in tandem with the blue economy. At the same time, the FTS 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.

Therefore, the planning of the metropolitan food system aligns with the productive specialisation 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 LMA will also play an important role in implementing the strategic framework of the Metropolitan Plan for Adaptation to Climate Change, particularly about 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. This plan also includes agendas to

which the implementation of the FTS is geared, such as the sectoral metropolitan agendas for economic adaptation, energy and energy security, water resources, human health, coastal zones, and the sea.

To sum up, food policies in Budapest are less integrated into urban planning and need to be more cohesive. While there are local initiatives to support food access and sustainability, these efforts need a cohesive policy framework and strategic direction. On the other hand, the Lisbon Metropolitan Area exhibits a more advanced and integrated approach to urban food policies, with comprehensive strategies that align with broader urban sustainability goals. The existence of a regional food policy network that participates in international networks and its commitment to innovative food solutions set it apart as a leader in urban food planning.

5. The case study of Budapest

For the Budapest case study, we focused on presenting the results of our qualitative interviews. This selective approach was adopted to provide a concentrated analysis of stakeholders' perspectives and insights on the potential integration of urban food planning and policy within the city administration, understanding their role, challenges, and opportunities in shaping urban food environments.

Through qualitative interviews, the Environmental Social Science Research Group (ESSRG) aimed to capture nuanced viewpoints, challenges, and opportunities perceived by city administrators, policymakers, and relevant actors in the urban development arena. We can present a concise yet comprehensive understanding of the landscape by focusing on these interview results. This enables a focused discussion on the feasibility and pathways for integrating food considerations within city governance frameworks.

We conducted 17 semi-structured interviews in the Mayor's Office, across various departments of the Municipality of Budapest, and within companies either partially or fully overseen by the Municipality; we sought to engage in dialogue with relevant stakeholders. Although we were open to discussions with a broad range of individuals, our primary focus was on those likely to influence food-related matters, particularly urban planners and those responsible for managing the city's green spaces. The stakeholders we interviewed are shown in this table.

Table 1. Interviews with city officials

Municipality of Budapest	**Mayor's Office Departments**	**Municipal Institutions**
Mayor	Climate and Environmental Affairs	Budapest Public Road Ltd.
Deputy Mayor	Urban Planning	Budapest Public Utilities/Division for Urban Park Management
Deputy Mayor for Urban Management	Social Policy	Centre for Budapest Transport
Deputy Mayor for Smart City and Participation	Landscape Architecture	Budapest Market Halls Ltd.
Senior Adviser on Housing and Social Policy		Budapest Wholesale Market Ltd.
Senior Health Adviser		InDeRe Food Research and Innovation Institute
		Budapest City Construction Design Ltd.

During these interviews, we inquired about the challenges they perceive within Budapest's food system, the necessary changes, and their perceived roles in this transformation. We evaluated their capacities, barriers, and gaps to gain insight into their connection to the food system and their potential roles in developing a healthy, just, inclusive, and sustainable food strategy for the capital.

By "capacity," we refer to the ability to effect change within the food system. This ability is contingent upon three factors: 1) the actor's knowledge of food-related issues, 2) their awareness of available means of action, and 3) the potential impact of the instruments they possess or could possess on the food system. The figure below shows the results of these discussions.

Figure 2. Actors of Budapest's food system and perceived roles' relevance

Our focal point is the transformation of Budapest's food system. Each shape's size and darkness represent each actor's perceived role based on their feedback and perceptions. At the apex, we find the Mayor and Deputy Mayor, who have expressed a strong interest in food issues and to be committed to elevating these concerns within the Mayor's office and the Municipality. The Mayor endorses an integrated approach, believing that the Municipality's engagement can yield positive outcomes. The Deputy Mayor is crucial in advocating for these issues within the General Assembly, making their support indispensable for any significant change.

The Climate and Environment Department is recognised for its influential role, particularly as a project partner responsible for implementing FoodCLIC within the Mayor’s Office. This department's involvement extends beyond this project, as it is integral to the city's climate strategy and energy transition initiatives. Consequently, the department perceives a direct connection to food-related issues and is motivated to incorporate this perspective into daily operations.

Several key entities are involved in the management of green spaces, including the Departments of Urban Planning and its Landscape Architecture Division. The Landscape Architecture Division oversees the Budapest Public Utilities/Division for Urban Park Management. At the same time, urban planning and implementation are handled by the Budapest City Construction Design Ltd. Presently, these agencies do not consider urban green areas as components of the food system, except for community gardens, which are in high public demand. Nevertheless, these agencies express openness to repurposing green spaces for food production or programs like the Orchard City Initiative, which envisions cultivating seedlings and saplings on city-owned land to be distributed to the suburbs for creating orchards and green areas.

The Budapest City Construction Design Ltd. identifies its transformative potential through its comprehensive knowledge of urban green spaces, capability to design strategies and planning frameworks, and capacity to execute these plans. However, before our discussions, they had not contemplated integrating food into their approach. Urban ecology is pivotal in urban space design, but food considerations have yet to be prioritised.

Lastly, Budapest Market Halls Ltd. occupies a foundational position. Market halls represent a critical and potentially transformative element of the food system. Almost each city district features a market, though not all are managed by the Municipality of Budapest; due to Budapest's dual administrative system, some fall under the jurisdiction of district governments. A rethinking of the role of markets is essential, as they could have a significant impact on citizens' food consumption patterns.

Based on our preliminary findings, we have identified three primary conclusions: information needs to be improved regarding food-related issues within the community, a widespread lack of understanding about the challenges facing Budapest's food system, and an insufficiency of capacity within the municipal departments. Although significant work remains, we are encouraged by the general openness and interest demonstrated by the various stakeholders. We plan to continue the co-design workshops and discussions at the city level to apply an integrated approach, as two of the FoodCLIC project's main objectives are to create an integrated food strategy for Budapest and establish a food policy network.

6. The case study of Lisbon

This section explores the application of the FoodCLIC framework within the Lisbon region, focusing on the municipality of Cascais as a pilot approach, visioning the subsequent sharing of experience and learnings with the other 17 municipalities within the Lisbon Metropolitan Area (LMA). While initial socioeconomic data positioned Cascais favourably compared to other LMA municipalities, for instance in terms of annual gross income per inhabitant and unemployment rate, a deeper analysis revealed significant internal disparities. Neighbourhoods like Adroana and Cabeço do Mouro exhibited stark inequalities, highlighting the complexities of achieving a city-region-wide healthy and inclusive food environment. This realisation underscored the need for a nuanced approach that considered the unique realities of each Cascais neighbourhood.

Following FoodCLIC methods, a needs assessment was conducted through three semi-structured group interviews with local stakeholders and residents from the targeted neighbourhoods. This process explored perceived food-system-related challenges, root causes, potential roles, and capacities within the food system. Identified key issues included limited access to essential food items, particularly fresh produce, leading to restricted dietary choices for residents. More fruit and vegetable consumption raised concerns about potential affordability or availability issues. The need for suitable venues for community gatherings further hindered the promotion of healthy food practices.

Beyond these immediate challenges, the in-depth analysis revealed broader concerns: food insecurity emerged as a significant issue for residents. Low food literacy levels limited knowledge about healthy food choices. Socio-economic barriers restricted access to healthy food options, while inadequate infrastructure, transportation limitations, and storage facilities presented additional challenges.

A Food Policy Network emerges as a crucial tool to tackle these challenges. By bringing together key stakeholders (local government, civil society, businesses, and academia), the Food Policy Network can foster collaboration and identify synergies to improve the food environment for vulnerable communities across the municipality.

The process evolved by identifying stakeholder capacities that can contribute to the FPN's success. Local government departments such as the Division of Social Solidarity and Life Quality and the Health Promotion and Well-being Division possess social services, health promotion, and community empowerment expertise. Cascais Food Lab offers resources for capacity building and promotes healthy and sustainable culinary practices. Terras de Cascais Strategy contributes through community production spaces and local food market development. Research partners from universities in Lisbon can provide valuable support in needs assessment, monitoring, and evaluation of FPN initiatives. Finally, representatives from food aid organisations, food education initiatives,

and private social solidarity institutions within civil society bring experience and willingness to contribute to positive change. However, engaging some key stakeholders, particularly representatives from local government and businesses, has proven challenging. Further efforts will be required to secure their participation in the FPN.

7. Conclusion

Developing integrated strategies for sustainable, healthy, and resilient food systems necessitates a context-specific approach that leverages the capacities and perspectives of the stakeholders involved in the city-region food system to position food system transformation as a central priority.

The Budapest case study identified several challenges in integrating food issues into urban planning. Not only is there a lack of information regarding urban food-related issues within the community, but we also recorded a widespread lack of understanding about the challenges facing Budapest's food system that the current capacities only insufficiently cater to. Budapest is seeking to join the Milan Urban Food Policy Pact and create a food policy network that will help to develop integrated strategies in the capital in the future.

The Lisbon case study highlights the importance of several vital learnings, starting with the benefit of a food transition strategy and a regional food policy network that provides guidance when planning the transformation of local food systems. On the other hand, the regional level can be enhanced and strengthened by local initiatives in permanent and interactive common learning. Looking into the case study in the municipality of Cascais, it becomes clear that urban planning and health policies still need to build up more integrated and integrative agendas when looking into local food strategies. Second, multi-layered analysis is crucial to effectively understanding disparities within municipalities and tailoring interventions. Third, community engagement is essential to involve residents in identifying challenges and shaping solutions effectively. Finally, a long-term stakeholder commitment is vital to harnessing diverse capacities within the FPN framework.

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