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Abstract

This paper explores the critical role of scale in food system planning. Although there is growing awareness of the importance of considering the city-region scale in food system planning, a comprehensive understanding of the scale of planning is lacking in this evolving policy field. This study addresses this gap by analyzing a series of food system planning projects developed at different scales in France. Drawing on document analysis and semi-structured interviews with officials, the paper explores three key dimensions of scale: administrative, action, and governance scales. Findings reveal that there is no relevant one-size-fits-all administrative scale for all food system planning projects. Instead, each administrative scale has its own strengths and limitations. Smaller-scale planning is often more efficient for rapid implementation but may fall into the local trap, whereas larger-scale planning offers a more appropriate scale to meet the food supply-demand balance at a city-region scale but risks a long process of coordination and inefficient implementation. The study identifies local political willingness, legal competences, and spatial appropriateness as significant factors when determining at which scale to develop food system planning. Moreover, the study investigates how localities define "local" within their food system planning practices. They vary from the ambiguous "as close as possible," administrative units, to

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quantified distances, but most action scales extend administrative boundaries. Finally, the study identifies locally designed governance strategies to match action scales and administrative scales, with empirical evidence from food system planning experiments applying cross-scalar and cross-local governance models. It also highlights challenges such as unclear distribution of responsibilities among jurisdictions, which hinders local implementation of actions. By providing empirical evidence, the paper contributes to a nuanced understanding of the scale issue in food system planning and emphasizes the importance of governance strategies and institutional design. The paper offers practitioners guidance on identifying and determining the scale of planning and governance strategies, while also providing scholars with directions for future research.

Keywords
agriculture, food planning, food policy, food security, food strategies, multilevel governance, public policy analysis, sustainable food system, regional planning, urban planning

Introduction

Local food systems are increasingly recognized for their potential to address challenges such as climate change, food insecurity, and social segregation (Allen, 2010; Baldy & Kruse, 2019; Feagan, 2007; Sherriff, 2009; Stein & Santini, 2022). In an era dominated by global food systems, public policies are critical in facilitating a transition towards local food systems. Public policies on food systems have long been a concern at international and national levels, addressing food insecurity through increasing productivity and the global food trade (Barling et al., 2002; Sonnino, 2016). However, this productivist approach has shown its deficiency, as it falls short in addressing localized issues regarding unequal access to healthy food and the ecological consequences of food systems (Morgan & Sonnino, 2010; Sonnino, 2016). Recognizing this shortcoming, practitioners and scholars have searched for solutions at the local level, thereby making food systems an issue in the local political agenda.

Over the past two decades, an increasing number of local authorities have initiated measures to support various aspects of food systems, ranging from production to consumption. While many authorities have adopted segmented actions, others have embraced integrated policies to systematically support local food systems (Candel, 2020; Karetny et al., 2022; Liu, Korthals Altes, et al., 2024; Mattioni et al., 2022; Robert & Mullinix, 2018; Sibbing et al., 2021). These integrated policies, referred to here as *food system planning*, outline goals and actions for developing more sustainable local food systems (Sonnino, 2016). Such policies are also known by other terms, such as *food planning* (Horst, 2017; Liu, 2024) and *urban food policy* (Morley & Morgan, 2021). The content of food system planning may address different aspects of food systems—such as allocating land, organizing food distribution facilities, and locally sourcing for public catering—depending on the different targets to be achieved (Candel, 2020; Liu, 2024). Food system planning is a burgeoning field with numerous unanswered questions, one of which pertains to the appropriate scale of planning.

The scale of food system planning is inherently linked to the *local* scale of food systems. Researchers have argued that "local" encompasses multiple dimensions of proximity, with geographical proximity being the most essential (Enthoven & Van den Broeck, 2021). However, "local" is not a fixed geographical distance. In food studies, the concept of "local" food systems is often operationalized through the lens of "city-region," which emphasizes connecting urban areas with their surrounding peri-urban and rural hinterlands (Carey, 2013; Fei et al., 2023; Jennings et al., 2015; Moragues-Faus & Marsden, 2017). These hinterlands are also referred to as a foodshed, or a geographic region that produces food for a particular population (Kloppenburg et al., 1996; Freedgood et al., 2011). In food system planning practices, the spatial boundary of "local" or "city-region" varies. It may span distances of 80 to 100 km (50 to 62 mi) or encompass a county, a subregion, or a whole country (Battersby & Watson, 2019; Carey, 2013; Morgan & Sonnino, 2010; Sonnino, 2016). Most food system planning projects do not rigidly delimit the local food system but rather describe it through the expected benefits (Mendes, 2007; Sonnino, 2016). Researchers have suggested that the boundary of city-region food systems should consider various

factors, such as foodshed, geographical appropriateness, jurisdictional boundaries, social coherence, and cultural identity (Borrelli & Marsden, 2018; Cavallo & Olivieri, 2022; Dubbeling et al., 2017).

Despite the emphasis on the city-region scale, planning mainly operates within jurisdictions. Most studies focus on food strategies adopted by municipalities (e.g., Mendes, 2007; Cretella & Buenger, 2016; Doernberg et al., 2019; Sibbing et al., 2021; Candel, 2020) or regional authorities (Ben-Othmen & Kavouras, 2022; Horst, 2017; Parsons et al., 2021). Some studies have shown that different food system issues correspond to different relevant scales (Battersby & Watson, 2019; Mendes, 2007). Born and Purcell (2006) have warned that scale is socially constructed and a given scalar strategy brings a certain direction of outcomes; they have alerted planners to the "local trap," noting that not all local activities result in positive outcomes.

Further, studies have highlighted the need to match *the planning scale* with *the scope of local food systems it addresses*. Zasada et al. (2019) suggested that a challenge for food system planning is the mismatch between administrative boundaries and the spatial extent of the local food systems that the planning addresses. This mismatch leads to planning inefficiencies because the competence of an administrative body is linked to the actions it can undertake within its jurisdiction (Hayhurst et al., 2013; Prové et al., 2019). Governance strategies have been proposed to address this mismatch. For instance, some have advocated fostering collaboration between neighboring localities to jointly develop actions covering foodshed (Calori et al., 2017; Wascher & Jeurissen, 2017). Drawing from empirical studies on Vancouver's planning, Mendes (2007) argued that municipalities can serve as effective "brokering institutions" that coordinate multilevel governance strategies.

The abovementioned literature outlines three dimensions of scale within food system planning:

1. The administration scale, which delineates the scope of the administrative jurisdiction within which planning authorities wield their power.
2. The action scale, which pertains to the spatial area that planning aims to cover.
3. The governance scale, which indicates the spatial scope wherein planning actions can be implemented through collaboration with partners.

However, several scale-related inquiries need *empirical* investigations for a deeper understanding. Concerning the administrative scale, although a recent study has shown how administrative scales affect the policy focuses of planning (Karetny et al., 2022), it remains unclear how the scales affect planning outcomes. Regarding the action scale, ambiguity exists surrounding how planning conceptualizes local food systems. In terms of the governance scale, although multilevel governance is increasingly acknowledged, it remains underdeveloped in planning practices (Fattibene et al., 2023; Sonnino, 2023). A comprehensive understanding of governance strategies, including their motivations and mechanisms, is lacking.

Thus, this paper aims to enhance the understanding of scale in food system planning by empirically examining a series of food system planning projects at various scales. This understanding will benefit both practitioners and scholars in the field of food system planning. For practitioners, a comprehensive grasp of scales will enhance the efficiency and effectiveness of implementation by identifying the appropriate actors to mobilize, setting suitable goals, designing achievable actions, and establishing governance strategies to manage cross-scalar matters. For scholars, the concept of scale presents a compelling framework to analyze and reflect on local governance within this emerging area of public policy. The research is guided by three questions and corresponding hypotheses derived from the literature:

1. Administrative scale: How do leaders at administrative levels of food system planning leaders affect planning approaches?

   Hypothesis: Food system planning project leaders[1] possess distinct competencies. These

[1] "Project leaders" in this paper refer to entities that develop food system planning projects.

competencies shape their roles and the policy instruments they employ across different administrative tiers.

2. Action scale: How is "local" conceptualized in food system planning?

   Hypothesis: Food system planning projects define "local" based on geographic, cultural, and administrative factors, aligned with their objectives. This action scale often transcends administrative boundaries.

3. Governance scale: What strategies does food system planning employ to bridge the gap when the action scale differs from the administrative scale?

   Hypothesis: Food system planning leaders establish partnerships with other stakeholders to create governance structures that extend beyond administrative boundaries to match the action scale. These strategies are based on the complementarity between stakeholders.

The empirical studies are based in France and focus on French local food system planning projects (*Projet Alimentaire Territorial*, or territorial food project). France offers an ideal test case because, unlike many other countries where food system planning is dependent on local initiatives, it has seen the widespread development of local food planning projects driven by a national scheme that actively encourages these efforts. These planning projects operate across various scales, offering a diverse array of samples for this study (Lamine et al., 2023). Despite the existence of the French Agriculture Act enacted in 2014,[2] which provides a nationwide framework for food system planning, food planning remains flexible, allowing ample room for local territories to explore different scales and experiment with locally adapted approaches to policymaking (Liu, Melot, et al., 2024). This institutional context is detailed in the methods section, together with case study areas and methods. Following this, the third section presents the results, aligning with the three dimensions of scale. The paper concludes by discussing the results and providing implications for policymaking and for researchers regarding fostering sustainable local food systems.

Methods and Case Study Areas

Institutional Contexts

French food system planning, officially established by the 2014 Agriculture Act, aims "to bring producers, processors, distributors, public authorities and consumers closer together and to develop local agriculture and improve food quality" (Article 1). The state encourages local stakeholders to develop food system planning through annual financial programs managed by the Ministry of Agriculture. A call for projects has been issued annually to finance projects that meet the requirements of the call. Food system planning is not a statutory responsibility for any public authority, and the law does not define any responsible entity for launching and managing food system planning projects. Both public and private stakeholders are eligible to apply for funding through the call for projects. Private stakeholders serving as food system planning leaders must be nonprofit or for-profit entities with collective interests.

France has three tiers of local authorities: municipality (*commune*), *département*, and *région*. A group of municipalities form an intermunicipal structure (*intercommunalité*), which receives increasing power delegated by municipalities. Additionally, territories of projects are other forms of public entities, including territorial clusters (*pôles d'équilibre de territoires ruraux*, or rural clusters, and *pôles métropolitain*, or urban clusters) and regional natural parks (*parcs naturels régionaux*). Territories of projects contain multiple municipalities or intermunicipalities and ensure regional coherence. Existing food system planning projects operate at the scales of municipality, intermunicipal structure, département, territorial clusters, and regional natural parks. They are led mostly by public entities but occasionally by associations, cooperatives, or Chambers of Agriculture (farmers' support organizations). Food system planning leadership can involve a combina-

[2] Agriculture Act: Loi n° 2014-1170 du 13 octobre 2014 d'avenir pour l'agriculture, l'alimentation et la forêt.

tion of entities, such as two neighboring intermunicipal structures (France PAT, n.d.; Lamine et al., 2023).

Food system planning is not an embedded responsibility for any public authority but relies on leveraging diverse local capabilities, including land management, spatial planning, school catering, mobility, and territorial development (Bodiguel, 2018). No clear responsibility is defined by law. The major agrifood-related roles of public entities vary:

- Département councils manage canteen catering in high schools, own land, provide nonbinding advice on regulatory land-use planning, and have the capacity to establish perimeters for farmland and natural resources preemption rights.
- Municipalities and intermunicipal structures[3] have land-use planning capabilities, manage primary schools and their canteens, and have the capacity to own and sell or bestow publicly owned land.
- Territorial clusters facilitate (inter-)municipal structures, particularly in rural areas, and may establish master plans, which are binding supradocuments for local land-use plans.
- Regional natural parks develop regional natural park charters, in which urbanization control and environment protection are included to guide territorial development.

Case Study Areas

Case study areas were located in two French regions, Occitania and Normandy. I identified them in the framework of a PhD project on land and food policies relating to the reterritorialization of agricultural activities. Their distinct agricultural characteristics offer a solid foundation for exploring a broad range of conditions and gaining a more generalizable understanding of the consequences of scale. Normandy has the highest proportion of utilized agricultural areas and larger average farm sizes, whereas Occitania has a larger number of farms, a higher proportion of organic farming, and greater agricultural diversity (Chambre d'Agriculture Normandie, 2024; Chambre d'Agriculture Occitanie, 2022). These case studies included food system planning projects at diverse scales (Figures 1 and 2): municipality (n = 1), intermunicipal structure (n = 16), two neighboring intermunicipal structures (n = 2), département (n = 3), territorial cluster[4] (n = 12), regional natural park (n = 5), and one regional natural park plus one rural cluster (n = 1). These planning projects exhibited complex spatial relations such as adjacency, overlap, or containment (Figure 3). Not all project leaders were public entities. The studied cases included three projects led by associations or a cooperative.

Data Collection and Analysis

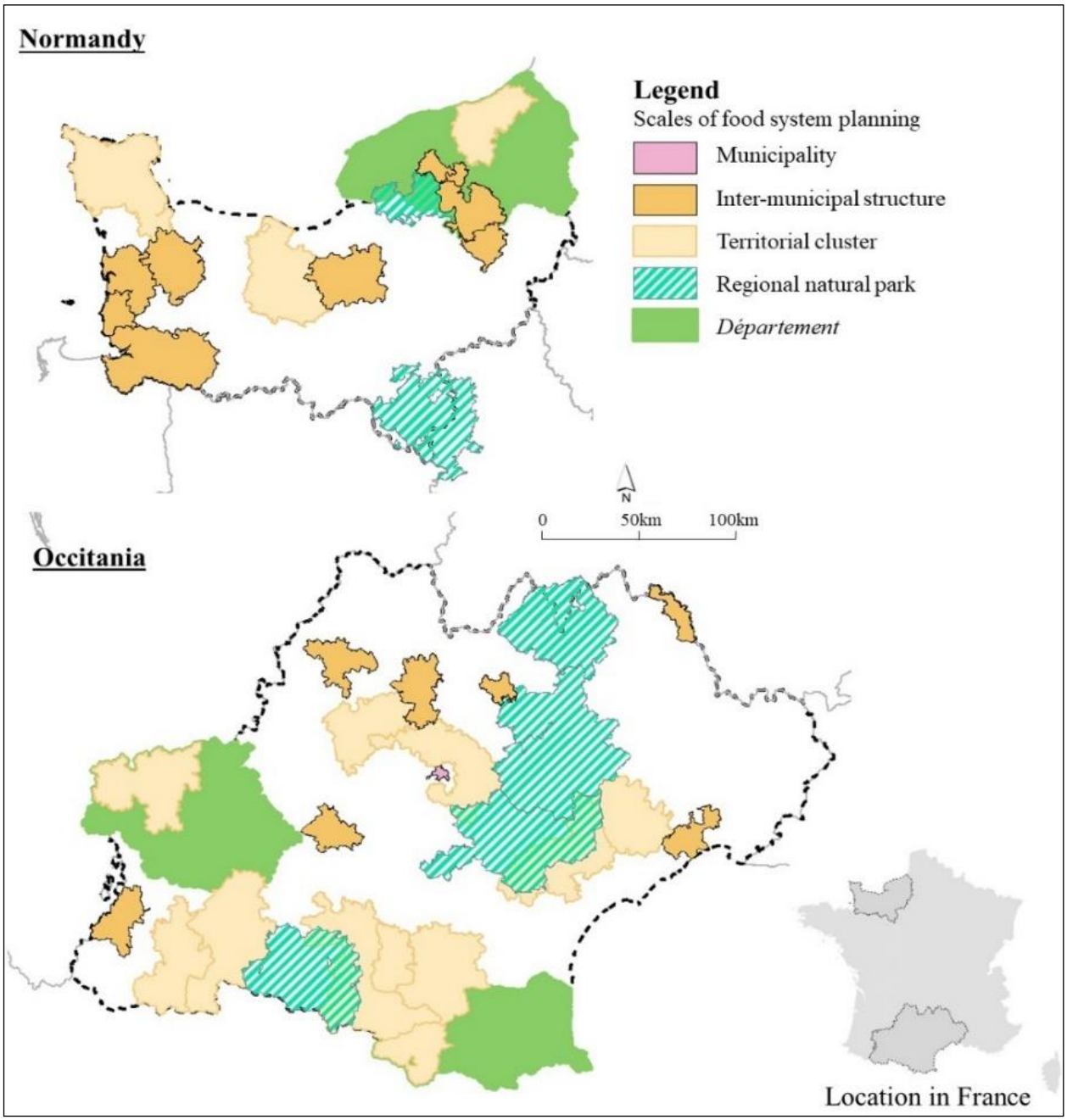
I conducted data collection and analysis through semi-structured interviews and document analysis. These methods aimed to address the three research questions concerning administrative, action, and governance scales. For the administrative scale, data collection and analysis were conducted to understand the role of project leaders and the factors influencing their decisions in developing food system planning at its current scale. I used document analysis to compare policy instruments adopted by different levels of public entities. For the action scale, I focused on understanding the local conception of local food systems. For the governance scale, I collected and analyzed data to identify strategies and challenges for project leaders to take action beyond their administrative boundaries.

Semi-structured interviews took place between January and October 2021 as part of the aforementioned PhD thesis. Relevant interviews included principally project managers responsible for food

[3] Municipalities and intermunicipal structures have similar rights. Municipalities can choose to or are obliged to delegate some of their capabilities to intermunicipal structures. This is also because municipalities in France are extremely small.

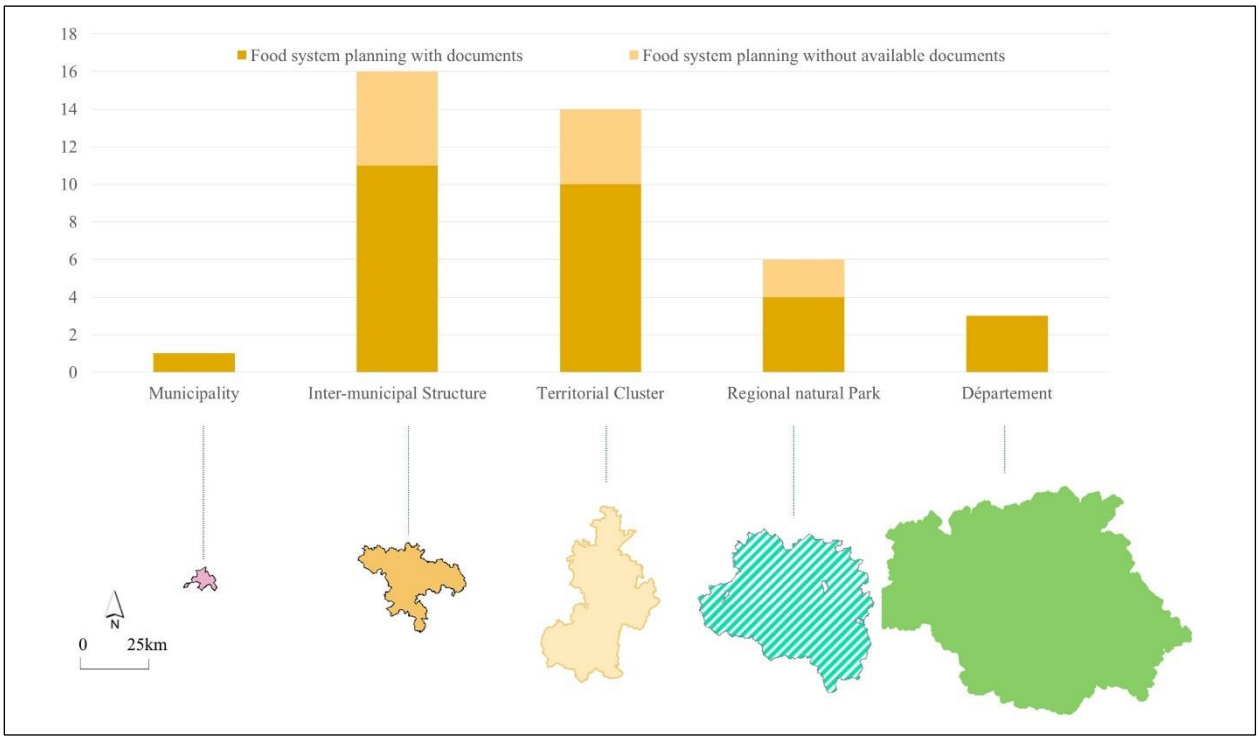
[4] The territorial clusters apply to urban or rural areas (in the studied cases, mainly in rural areas). They are composed of a group of intermunicipal structures. The common major objective of these clusters is reinforcing the collaboration between local authorities (municipalities or intermunicipal structures).

Figure 1. Studied Food System Planning Projects



system planning. I identified them as principal interviewees because of their comprehensive knowledge of the entire process and their relatively neutral political positions. I also interviewed additional stakeholders, including staff from the Chamber of Agriculture and elected officials. They were invited either by the project managers for their local knowledge or by the author to provide complementary information at the regional level. Interview questions related to this study covered (1) the role of project leaders, (2) the definition of "local" in food system planning, (3) the rationale for launching the food system planning at its current scale, and (4) strategies for collaborating with neighboring, supra-, or infraterritories in food system planning development and implementation. I

Figure 2. Dataset of Food System Planning Case Studies by Spatial Scale



Note. (a) Food system planning at the scale of two intermunicipal structures was categorized as a "rural cluster" considering the spatial scale. They were both at the scale of the pre-existing rural cluster. (b) Food system planning at the scale of a regional natural park plus one rural cluster was categorized as a "regional natural park."

recorded all the interviews with the interviewees' permission and transcribed them. I used the qualitative analysis software Atlas.ti to code the interview transcripts based on these four topics. I conducted the original interviews in French and translated them into English for all quotes included in this paper.

I collected food system planning documents from official websites and those provided by interviewees, including working documents. To address the question of administrative scale, I analyzed documents to compare the policy instruments adopted for food system planning at different administrative scales. I compared 10 policy instruments across four topics: land, collective catering, environment protection, and local food facilities. I grouped administrative levels with similar legal capabilities to facilitate comparison. The single municipality was combined with intermunicipal structures, and territorial clusters were combined with regional natural parks. I also reviewed documents to identify the definition of local food systems and governance strategies.

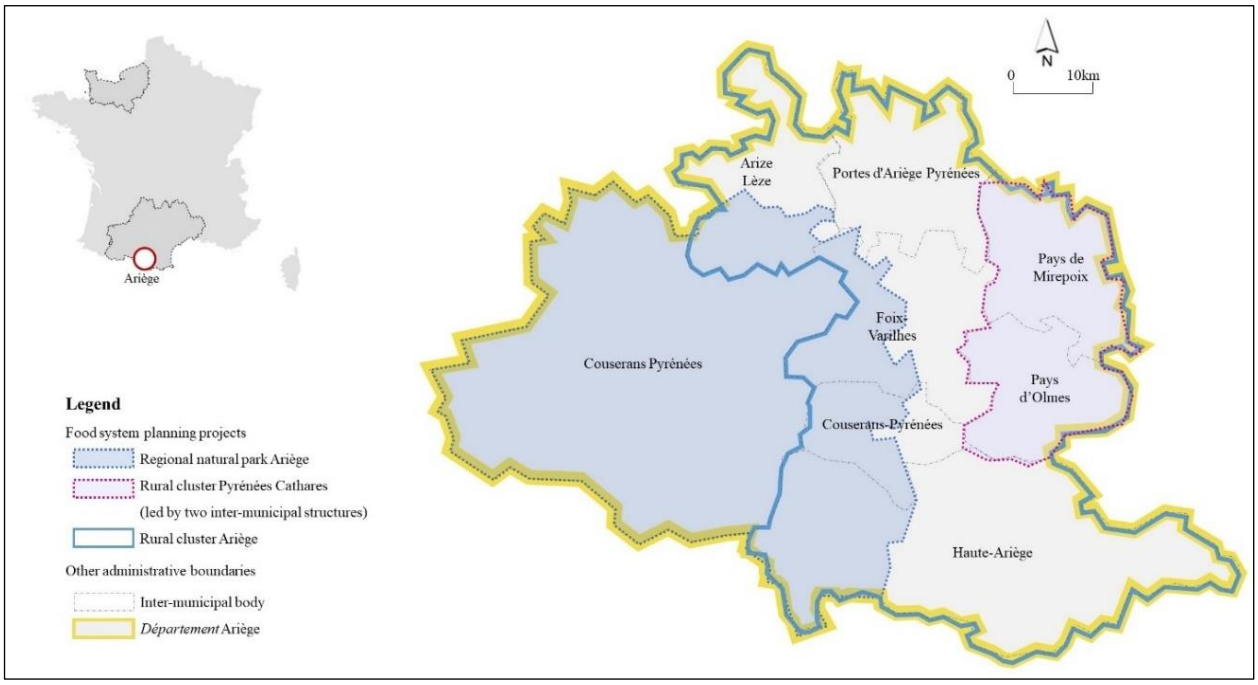
Results

Administrative Scale: Compare Planning Approaches and Roles of Project Leaders

Planning approaches and roles of project leaders across scales

I identified the prevalence of selected policy instruments used by administration scales of food system planning through document analysis (Table 1). These policy instruments reflect the specific planning efforts involved in each project. Across all administrative scales, planning projects consistently addressed some topics and applied policy instruments to achieve them, such as collective catering and farm incubator development. Other instruments showed significant differences. For example, intermunicipal structures were particularly active in

Figure 3. Overlap of Food System Planning Projects at Different Scales: Example in Ariège



leveraging publicly owned land, whereas regional natural parks and territorial clusters were more inclined toward facilitating product diversification than other structures by providing analysis and strategies to improve product diversification and offering information, communication, and advice to facilitate farmers' transitions to being more eco-friendly (Table 1).

The roles played by project leaders further illustrated these disparities in policy instrument usage. Interviews reported that most food system planning project leaders play roles as project coordinators (including overseeing the plan, coordinating actions, organizing committees, monitoring agendas and budget, and applying for funding) and project managers (acting as project owners when implementing actions). However, their dominant roles vary depending on the scale of food system planning.

Municipalities and intermunicipal structures played a more significant role as *project managers* compared to other structures. They actively engaged in actions related to dispensing publicly owned land and buildings to facilitate local farming activities and food facilities (Table 1). Moreover, according to interviewees, (inter-)municipal structures often directly intervene in facility investments, such as managing logistics platforms or allocating publicly owned land for vegetable centers.

In contrast, territories of projects, that is, territorial clusters and regional natural parks, fulfilled more roles as *coordinators* and *facilitators*. These structures primarily coordinated partners due to their limited capacity to implement actions requiring substantial material or financial investment. These territories were active in developing food facilities (farm incubators, local processing facilities, and distribution facilities; Table 1). However, interviewees confirmed that they did not execute concrete projects themselves but rather coordinated partners involved in projects. Additionally, territories of projects played a specific role as *facilitators,* aligning with their responsibility to facilitate very local-scale authorities (intermunicipal structures and municipalities). For instance, these structures were the most active in training local authorities on land preservation tools (Table 1). As well, although collective catering is not an official responsibility of territories of projects, they actively supported school canteens through providing analysis, advice, and communication activities (Table 1).

Table 1. Comparison Between Policy Instruments Leveraged in Food System Planning Across Administrative Scales

Administrative scale of food system planning	Collective Catering	Facilities			Land				Environment	
	Provide analysis, advice, and communication to improve collective catering	Create farm incubators	Create local processing facilities	Create local food distribution facilities, e.g., food hubs, logistics, storage facilities	Use publicly owned land and buildings for local farming	Leverage land-use planning & associated instruments	Fallow land reclamation	Train local authorities on land preservation tools	Provide analysis and strategies to improve product diversification	Provide information, communication, and advice to facilitate farmers' ecological transition
(Inter-) Municipality *(N* = 13)	92.3% (12)	30.8% (4)	46.2% (6)	46.2% (6)	69.2% (9)	23.1% (3)	7.7% (1)	7.7% (1)	23.1% (3)	30.8% (4)
Territorial cluster/ regional natural park *(N* = 11)	81.8% (9)	63.7% (7)	54.5% (6)	36.4% (4)	18.2% (2)	36.4% (4)	18.2% (2)	63.7% (7)	54.5% (6)	63.7% (7)
Département council *(N* = 2)	100% (2)	50% (1)	-	-	50% (1)	-	-	-	-	-

Note. Food system planning project of Pyrénées Cathares was categorized under (inter-)municipality because the project was led by two intermunicipal structures; food system planning projects of Haute Vallée de l'Aude, of Pyrénées Catalanes, and of Pyrénées Orientales were not included in this comparison because their project leaders were not public entities.

Département councils mainly functioned as *coordinators,* with a dual role of coordinating both intradepartmental planning projects and numerous intermunicipal structures. According to the interviewees, however, this coordinating responsibility was still evolving:

> This is a real question that the département is wondering: How it should be positioned? Should it encourage sharing and pooling? Can it be a support to help territories that do not necessarily have the means to develop food system planning or that have not thought about it too much; should it be positioned as a support? Should it take charge of certain actions on particular competences? So the question of the articulation of the positioning … and the legitimacy of the actors to intervene in the different territories, it necessarily arises. (Staff, Chamber of Agriculture of the region of Normandy, June 11, 2021)

Département councils were only involved in a few concrete actions among the analyzed instruments (Table 1), one of which was collective catering in high schools, a core legal responsibility of département councils. Additionally, they may approach food system planning differently than other authorities, as reported by one interviewee who described their planning as a "road map" rather than a regular "action plan." As such, food system planning serves as a framework guiding food policies for future years, with detailed actions developed progressively.

Advantages and disadvantages of food system planning at different scales

According to the interviewees, scale was often not a primary consideration when launching food system planning projects. Most interviewees reported that localities typically initiated these projects as an extension of existing local agrifood initiatives, combined with incentives from the national initiative for developing food system planning. For example, rural clusters that had already implemented measures to enhance local supply chain activities frequently developed food system planning projects in response to national encouragement. However, scale emerged as an influencing factor in the initiation and evolution of certain planning projects. Evidence from five projects shed light on the advantages and disadvantages of small and large planning scales (Table 2).

The first two cases in Table 2 demonstrate the development of small-scale food system planning to seek implementation efficiency. The municipality of Albi intentionally developed planning at the municipal scale to guarantee implementation of measures to improve local agriculture and social justice, despite recognizing potential constraints

Table 2. Five Cases in Which Scale Played a Role in Food System Planning Processes

Food system planning project leader	Size (population; area)	Scale-related action and rationales
Municipality: Albi	48,526 p; 44 km² (17 mi²)	Developing food system planning at the municipal scale: Seeking efficiency
Rural cluster: Dieppe Pays Normand	109,821 p; 855 km² (330 mi²)	Down-scaling of rural cluster scale food system planning to intermunicipal structure scale: Seeking efficiency
Rural cluster: Armagnac	43,387 p; 1,700 km² (656 mi²)	Developing food system planning at the rural cluster scale due to failure at the intermunicipal scale: Political willingness
Rural cluster: Pyrénées Comminges	77,435 p; 2,137 km² (825 mi²)	Developing food system planning at the rural cluster scale because of an intermunicipal proposal: Territorial coherence
Intermunicipal structure: Tarbes-Lourdes-Pyrénées	127,086 p; 614 km² (237 mi²)	Wishing to upscale food system planning from intermunicipal to departmental scale: Balancing food supply-demand

Sources: Population and surface area data: Insee (2024), data in 2021; rationales: interviews.

related to administrative boundaries. Similarly, the rural cluster–scale food system planning in Dieppe faced obstacles due to the unequal political engagement of intermunicipal structures within the cluster. Consequently, one intermunicipal structure where stronger political interest existed developed its own food system plan.

However, small-scale food system planning also encountered challenges due to resource constraints. For example, although the municipality of Albi established a steering committee to develop actions beyond municipal boundaries to make use of other partners' capabilities, implementing certain actions proved challenging. These challenges were exemplified by restrictions on land use intervention:

> When I set up market gardeners, for the moment, I do it on the scale of Albi. On this type of action, it is difficult to go elsewhere because each municipality is responsible for its own land; we will not "steal" land from our neighbors. (Civil servant, municipality Albi, Occitania, September 27, 2021)

Conversely, three other territories (Table 2) experienced the upscaling of food system planning, driven by either political or spatial considerations. In the rural cluster of Armagnac, initial attempts to develop intermunicipal scale planning were hindered by a lack of political interest in the intermunicipal structure. Consequently, the rural cluster took over responsibility. The two other projects were developed (or aimed to extend) beyond the spatial area under the initiating structures' administration. They sought to encompass both consumer and producer areas or to ensure territorial coherence across mountainous landscapes.

Action Scale: Diverse Interpretations of "Local" Beyond Administrative Boundaries

I examined the action scales of planning by analyzing the interpretation of "local" in food system planning. Interestingly, none of the food system planning documents explicitly defined "local." I obtained insights into the interpretation of "local" from interviews, uncovering a diverse range of understandings across territories (Figure 4).

"As close as possible" was the most frequent interpretation of "local," acknowledging the varying distances needed for sourcing different types of food due to physical constraints. Through a local food hub example, an interviewee illustrated how this notion would be implemented through different grades of proximity:

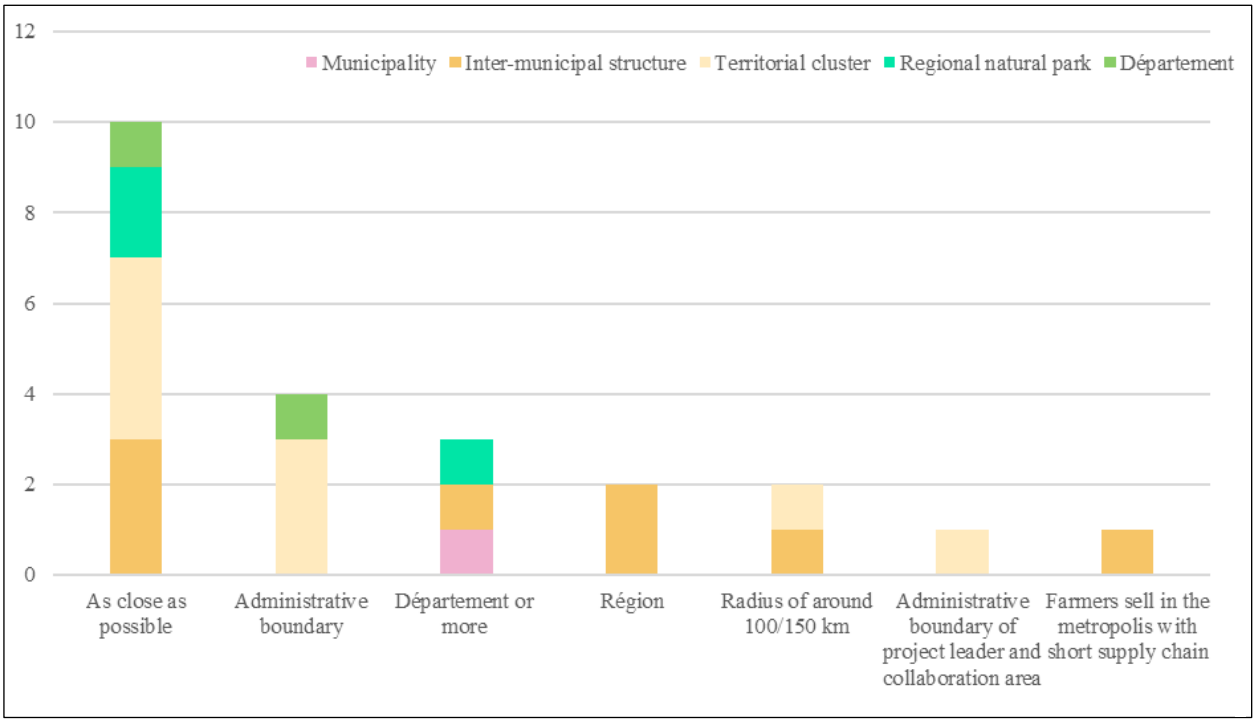
> It will be done by priority. … The first suppliers will be the shareholders of the cooperative with collective interest … Then, if the necessary products are not available among these shareholders, the platform can buy from producers in the Pyrénées-Orientales département. Then, if the necessary products are not available from producers in the Pyrénées-Orientales, it will go to neighboring départements and then to the Occitania region, but really each time by strata. (Staff, Chamber of Agriculture Pyrénées-Orientales, September 24, 2021)

Interviewees of four food system planning projects, all managed at relatively large scales (rural administrative boundaries. In rural cluster Haute Vallée de l'Aude, "local" was linked to planning goals. The boundary was limited administratively because the central goal of the planning was to cluster and département*)*, reported "local" as the support local producers rather than improve local supply chains. This interviewee also emphasized that "local" would go beyond the administrative boundary if planning goals changed.

In three territories, interviewees indicated that "local" food would be within the département or neighboring départements*,* considering food supply capacity. In Normandy, two intermunicipal structures defined "local food" as regional products, reflecting both spatial feasibility and cultural identity considerations.

Two territories defined "local" with physical distances. One suggested a radius of approximately 100 km (62 mi), reflecting consumers' living areas and local producers' capacity to reach consumers without intermediaries. In another territory, the definition referred to a radius of 150 km (93 mi), aligning with the concept of a production basin or academically termed "foodshed" (Kloppenburg et al., 1996).

Figure 4. Interpretation of "Local" in the Framework of Food System Planning



Note. (a) Data included 23 food system planning projects. (b) For the category "administrative boundary," interviewees emphasized the administrative boundary but also mentioned food from neighboring territories or neighboring département might also be recognized as local.

Two other territories adopted uniq ue interpretations of "local." In the rural cluster of Haut Languedoc et Vignobles, the concept extended to a governance scale involving neighboring partners (the neighboring regional natural park, which has overlapping areas with the rural cluster). For example, their digital map for local food information encompassed the area of the rural cluster and the regional natural park. For the Metropolis of Montpellier, "local" addressed the logic of a short supply chain: "we stick to farmers who can sell through short supply chains in the metropolis, who can sell directly without going through wholesalers" (civil servant, intermunicipal structure Metropolis Montpellier, October 7, 2021).

Moreover, *none* of the food system planning projects identified self-sufficiency as an operational objective. Although the municipality of Albi initially aimed for self-sufficiency, it later abandoned the idea "because otherwise, we would not succeed; it would be discouraging after a while" (civil servant, municipality Albi, September 27, 2021). The other two projects in rural areas engaged with the concept of "self-sufficiency," interpreting it as improving local high-quality food production and distribution outlets.

Governance Scale: Overcome Administrative Boundaries Through Multilevel Governance

When the definition of "local" extends beyond administrative boundaries, food system planning needs to seek support from neighboring or supraterritorial entities to match the action and administrative scales. Case studies offered insights into strategies and challenges in transcending boundaries through multilevel governance. This governance approach entails both horizontal collaboration across localities and vertical collaboration between public entities at different administrative levels.

Cross-local collaboration

I identified four types of cross-local collaboration in food system planning. The first type of collab-

oration involved *formalized organizational relationships*. For example, two urban metropolises established collaborative partnerships with neighboring rural areas through conventions or reciprocal contracts (Comité interministérial aux ruralités, 2015). These agreements were based on the limited capacity of metropolises to support their own food supply and included coherent agrifood policy directions for the surrounding rural territories to follow.

The second type of cross-local collaboration was the *co-development of food system planning strategies between neighboring areas*. Although exchanges between most food system planning projects remained at the stage of technical communication and experience learning, some territories went further by collaboratively developing strategies. For instance, an "interplanning" document was developed to guide the food system planning projects of the Haute Vallée de l'Aude rural cluster (led by a cooperative, Maison Paysanne de l'Aude) and Castelnaudary (led by a municipality; Figure 5a). This collaboration aimed to ensure coherence, avoid competitive actions, and, most essentially, help each area complement each other due to the specialization of resources. The two collaborated projects valued this complementarity because livestock farmed in mountainous areas could be fed by crops provided from the plains, while public canteens in the municipality of Castelnaudary could be supplied by livestock from rural mountainous areas (Figure 5b). The two projects developed shared strategies in the field of food education, structuring supply chains, raising awareness among elected officials of farmers' setups, and supporting food system planning management. The planning document also included budget estimates and responsibilities.

The third collaboration pattern involved *leveraging civil society organizations or private-sector actors* to overcome administrative boundaries, as these actors are not restricted by jurisdictional limitations. Interviewees reported that partnerships with entities such as farmers' associations at département levels naturally extend actions to a larger scale beyond the administrative boundaries of food system planning.

Fourthly, *economic projects* provided opportunities to connect neighboring localities. Initiatives such as processing centers, transport and logistic platforms, food hubs, and producers' shops were reported to facilitate collaboration between adjacent areas. While these initiatives prioritized proximity in sourcing suppliers or members, they were not constrained by the administrative boundaries of food system planning.

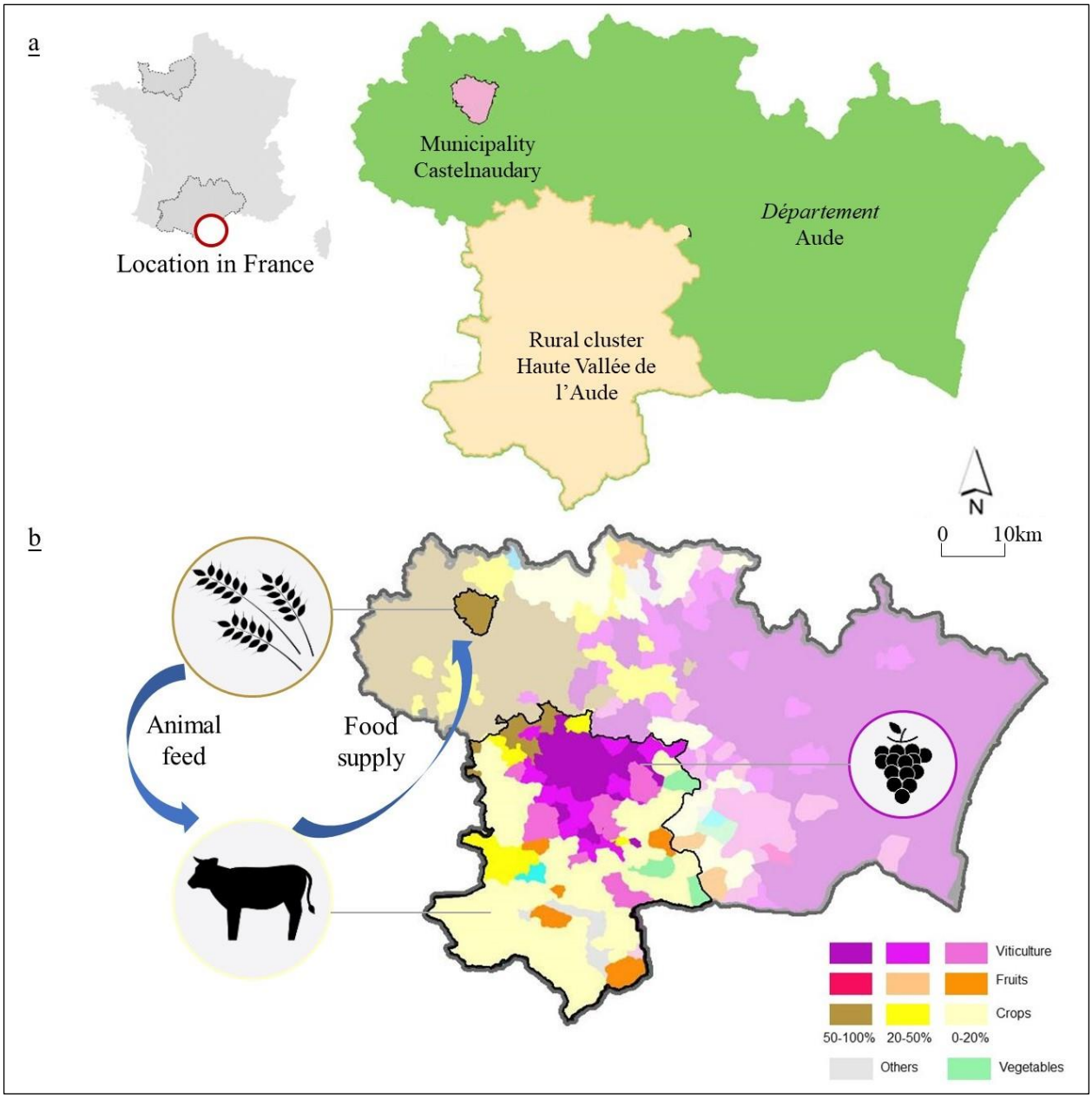
Cross-scalar governance

Governance involving entities at different levels was examined among overlapping food system planning projects, for example, in the case when a département and intra-département territories simultaneously developed their own food system planning projects (see, for example, Figure 3). Interviewees emphasized key collaboration issues such as coordinating actions on a global scale, avoiding vicious competition, and fostering synergies. For example, an interviewee from a département council highlighted the need to coordinate intra-département food system planning (i.e., planning developed within a département but at a level below the entire département area) to optimize the arrangement of collective food infrastructure:

> Not all the food system planning projects are going to have their own vegetable centers or logistics platforms, even though this is an ambition in every food system planning [project]. It is clear that we cannot all have our own vegetable centers throughout the territory. So, the objective of the département's food system planning is rather to enable exchanges between project leaders to see if pooling and sharing is possible. (Civil servant, département council Seine-Maritime, May 11, 2021)

Major challenges emerged in cross-scalar collaboration among overlapping food system planning projects due to the unclear distribution of responsibilities among administrative levels. This lack of clarity made project leaders cautious when exercising their power in planning processes. For example, département councils have the capacity to establish perimeters for farmland and natural resources preemption rights and integrate them into food

Figure 5. Collaboration Between Food System Planning Projects of Haute Vallée de l'Aude and of Castelnaudary



Note. 5a. Location relationship of food system planning projects. 5b. Major food production types and complementarity. 5b is adapted from a map of the dominant agriculture of municipalities in Occitania (DRAAF Occitanie, 2022).

system planning. However, none of the studied cases showed a willingness to do so. An interviewee explained that département councils tended to be hesitant in linking their prerogative with agriculture, in order not to offend other authorities or oppose their legal capabilities:

> The relationship [between pre-emption perimeters and agriculture] could be made, there is no problem. … The problem is really the politics of the *département* [council]. … The agricultural competence was withdrawn from the Gers *département* within the framework of the

> New Organization Act.[5] … So, there is an interplay of actors in the territory for which we have to be careful; we should not carry out an agricultural policy within the *département* in order not to offend other players in the territory. That is also why the *département* decided to go for food system planning, because it was politically easier. (Civil servant, *département* council Gers, June 17, 2021)

Due to these challenges, collaboration between different levels of food system planning mainly involved technical communication between project managers. I observed an exception in the département of Aude, where cross-scalar food system planning collaboration occurred. The action plan of an intra-département food system planning project, led at the scale of a rural cluster, integrated the actions of the département food system planning (Table 3). The rural cluster scale food system planning took into consideration the departmental actions to ensure complementarity and avoid repetition. However, it should be noted that the rural cluster–scale food system planning was led by Maison Paysanne de l'Aude, a cooperative operating at the département scale.

Discussion

This study examined the scales of local food system planning in the French context across administrative, action, and governance dimensions. Findings indicate that planning at different administrative scales plays different roles but does not have clear-cut characteristics in applying policy instruments. Moreover, there is no single relevant scale for food system planning; each scale presents advantages and disadvantages. The action scale, however, tends to transcend administrative boundaries, offering opportunities and challenges for governance structures to implement planning effectively. Although innovative governance structures were identified to implement actions beyond administrative boundaries, they encounter challenges in navigating multilevel governance within this evolving policy field. These challenges suggest the necessity of appropriate institutional design in food system planning.

The hypothesis regarding the administrative scale of food system planning assumed that project leaders' capabilities influence their roles and planning instruments. The results only partially support this hypothesis. Although project leaders' roles are indeed shaped by their legal capabilities, distinct

Table 3. Example of an Action Plan Integrated with Supra-Scale Food Planning

Main Topic	Subtopic	Action	Corresponding food system planning project
Collective catering	Supporting out-of-home catering projects to be sustainable and local, favoring introducing local and organic products in collective catering	Collective catering assessment of the rural cluster	Food system planning of the rural cluster: Funding from the recovery plan
		Locating the territorial offer in collective catering	
		Supporting voluntary municipalities to regain the re-municipalization of their canteens	
		[…]	
	Awareness-raising in collective catering	Animal- and plant-based protein: Finding a balance	Food system planning of the rural cluster: Other funding
		Promoting local and organic products in the institutions	Food system planning of the département
		Developing activities for schools "taste the world around me"	

Source: Translated and adapted by the author based on the food system plan of Haute-Vallée de l'Aude, 2021.

[5] The département councils' capability for agricultural oversight was removed according to the New Organization Act 2015: LOI n° 2015-991 du 7 août 2015 portant nouvelle organisation territoriale de la République (1).

differences in policy instruments used by different administrative structures were not evident.

Municipal and intermunicipal structures function as both project managers and coordinators, often undertaking direct actions and managing concrete projects that require material investment. In contrast, territorial clusters and regional natural parks primarily act as coordinators and facilitators, supporting lower local authorities. Département councils play a role in coordinating actions as well as intra-département food system planning projects. It is worth noting that the limited number of projects led by départements in this research restricts the ability to draw general conclusions. Nevertheless, the findings reveal no clear distinction between policy instruments adopted by different administrative scales of food system planning. Three reasons likely explain this. Firstly, agrifood policies do not clearly distribute responsibilities across government scales, leading project leaders to reinforce their legitimacy by trying different possibilities. Secondly, many policy instruments are not coercive or are reliant on nongovernmental partners. These instruments are not associated with any embedded legal competence and can be managed by any scale of food system planning. Thirdly, the codevelopment nature of food system planning allows project leaders to expand their capacity by collaborating with partners (Ben-Othmen & Kavouras, 2022). It should be noted that this codevelopment depends heavily on coordination and communication work and may hinder efficiency (Santini & Fournier, 2024).

The results also highlight that food system planning can be managed at different scales, with no single scale being the most relevant. Although agrifood matters are new for all scales of local territories, territories have the flexibility to leverage capabilities held by different public entities. This flexibility may explain why food system planning is undertaken at various scales. Each scale can mediate multiscalar actions, which Mendes (2007) referred to as "brokering institutions."

Additionally, the rationales of project leaders for developing food system planning at specific scales help explain the advantages and disadvantages associated with administrative scales. Smaller-scale planning tends to offer efficiency in rapid implementation but may fall into the "local trap" (Born & Purcell, 2006). By contrast, larger-scale planning provides a more appropriate scale to address food supply-demand balance at a "city-region" scale (e.g., Carey, 2013; Fei et al., 2023) but risks a long coordination process and inefficient implementation. This raises the question of the pertinent scale for the coordination and mobilization of actors. These findings suggest that the choice of food system planning scale entails trade-offs between political willingness, scale appropriateness, and implementation effectiveness.

In this study, I did not systematically explore the causal relationship between motivation and planning scale, partly due to the unique context of French food system planning. The national initiative has significantly influenced local food system planning by giving localities financial support and legitimacy. Thus, French food planning projects, which are primarily initiated by public authorities, are distinct from those in other contexts (Liu, Korthals Altes, et al., 2024). This study shows that most localities developed their plans at their own scale, driven by the national initiative and based on existing agrifood initiatives. The few cases in this study where scale considerations influenced planning highlight the evolving nature of this new policy field. Future studies could investigate how driving stakeholders and the initial motivation of planning influence planning scales, especially in contexts where these factors vary significantly.

Concerning the scale of actions, I hypothesized that the definition of "local" food systems is influenced by geographic, cultural, administrative factors, and that the scope of actions often extends beyond administrative boundaries. The results reveal varied interpretations of "local," ranging from the concept of "as close as possible" to administrative units or quantified distances. None of the interpretations perfectly align with the ideal foodshed, suggesting that the "foodshed concept is more a metaphor than an actuality" (Freedgood et al., 2011, p. 98). These interpretations also reflect the logic of geographical proximity, cultural identification, and the economy of proximities (Torre & Wallet, 2014). Furthermore, the findings support the hypothesis that most action scales extend beyond administrative boundaries, highlighting the

need for governance strategies to match the scale of action and the scale of competence.

None of the food system planning projects examined in this study explicitly defined "local" in their written documents. This finding is consistent with Sonnino's (2016) findings from international food system planning cases. A possible explanation is that project leaders mean to keep food system planning open and to avoid limiting actors' participation. This raises a fundamental question in planning practices: Should a clear definition of "local" within food systems be established in planning to delineate the scope of actions, or is it preferable to maintain an open and inclusive approach?

In terms of governance scale, the hypothesis proposed that when action scales and administrative scales do not match, food system planning leaders may establish partnerships with other stakeholders to ensure mutual benefit and action implementation beyond administrative boundaries. The results reveal diverse forms of governance structures that involve private entities, neighboring territories, and other levels of public bodies. However, these governance structures were locally developed through experimentation and not universally established. Cross-scalar governance appears to be particularly complex due to unclear responsibilities between different levels of authorities, highlighting a need for guidance on relevant scales for actions.

I identified cross-local collaboration as primarily driven by economic and political motivations, consistent with previous findings on French food system plans (Corade & Lemarié-Boutry, 2020). Examples include collaboration between neighboring territories based on urban–rural resource complementarity, cooperation on collective food infrastructure for economic viability, and partnerships with associations and private actors who operate beyond administrative boundaries.

Despite pioneering projects testing innovative ways of cross-scalar collaboration, the results highlight challenges for cross-scalar governance between food system planning projects developed within the same territory. What scale is appropriate for what policy instrument remains unclear. This unclarity introduces uncertainty to project leaders when they seek to implement actions that are not clearly within their legal capabilities. A previous study has argued that different food system issues correspond to different relevant scales (Battersby & Watson, 2019). My study suggests that the design of policy instruments should consider both social-economic viability and political appropriateness (i.e., aligning with the capabilities and existing projects of project leaders at that scale).

In summary, the findings of this study on the three dimensions of scales of food system planning offer valuable insights into addressing the concern over the "local trap" proposed by Born and Purcell (2006), who have argued that local does not inherently yield benefits from environmental, social, and economic perspectives. Indeed, there can easily be a "local trap" from a technical standpoint due to limitations related to administrative boundaries and legal competences. Nevertheless, this study demonstrates that appropriate cross-scalar and cross-local governance mechanisms can overcome these barriers and avoid such a "trap." The process of organizational institution design must be accompanied by the process of learning, as illustrated by the studies on the evolution of the London metropolis food system planning (Morgan & Sonnino, 2010; Parsons et al., 2021; Reynolds, 2009).

Conclusion

Local food system planning has emerged as a new public policy focus in many localities, with its scale remaining an underexplored question. This study breaks new ground by empirically investigating the impact of scales on food system planning through a series of French cases, analyzing three dimensions of scale: administrative, action, and governance scales. These dimensions provide a nuanced understanding of the complexity of scale, while the empirical approaches illustrate strategies and challenges in practice when operationalizing this theoretical question.

Understanding scales with these multiple dimensions provides insights to practitioners involved in food system planning, including politicians, officials, and grassroots activists. My findings indicate that there is no one-size-fits-all best planning scale for every locality. Therefore, practitioners should consider local contexts—such as political willingness, legal capacity, and spatial appropriateness—when designing food system planning

and be prepared to make necessary compromises. Practitioners at the national or regional level could establish guidelines defining which scales of localities are most appropriate for specific actions. Evidence from this study indicates that larger-scale localities might be more effective at coordinating regional facilities' spatial distribution, managing rural–urban land use, and promoting product diversification. In contrast, smaller-scale localities are better suited for concrete implementation actions, such as allocating public land and establishing test farms. These actions should, however, integrate the legal capabilities and political willingness of localities. Given that each scale presents unique strengths and limitations, localities should develop tailored governance strategies to coordinate stakeholders and ensure effective implementation. The results of this empirical study provide practical guidance for multilevel governance strategies. This guidance includes establishing formal partnerships between localities, co-developing strategies and actions, leveraging private actors to overcome administrative boundaries, and using economic projects to connect neighboring localities. However, it is crucial for localities to adapt these strategies to their specific political and social contexts.

These findings also offer valuable insights into research in food system studies when engaging issues of scale. This study highlights the challenge posed by the unclear distribution of responsibilities among different levels of authorities, which hinders effective food system planning. Further research could focus on identifying the appropriate agrifood competency at each scale to enhance collaboration and resource allocation across jurisdictions. These responsibilities might include organizing food hubs and other distribution facilities, land use, product diversification, educational activities, and school catering sourcing. Additionally, research could draw from traditional planning experiences, such as land-use planning, to explore how the coordination between different levels of authority can be improved. Future empirical studies assessing the implementation of policy instruments would also help determine which scales are most suitable for specific actions. Studies dedicated to multilevel governance models and their effectiveness could also contribute to the field of food system planning. Scholars could explore the conditions under which such models succeed or fail and develop frameworks that support effective coordination across scales, thereby minimizing conflicts and redundancies. This study also demonstrates the varied understandings of "local," suggesting future research should be context-specific. Future research could aim to standardize definitions and develop a typology of "local" regarding food systems.

While this study addresses the question of how scales shape planning, it also raises an important question: How does planning shape the scale of local food systems? As Born and Purcell (2006) claimed, scale is socially constructed. Planning should be understood not only by the outcomes but also by the processes through which partnerships take place and stakeholders exchange information and experience. These processes enable planning to shape local food systems that it aims to develop, considering factors such as environmental sustainability, cultural identity, and the population whose quality of it aims to improve. Only by considering these elements together can we contribute to the structuring and improvement of sustainable food systems.

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