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## EDITED BY

Javier Sanz-Cañada,  
Spanish National Research Council (CSIC),  
Spain

## REVIEWED BY

Gerardo Torres Salcido,  
National Autonomous University of Mexico,  
Mexico  
Giovanni Belletti,  
University of Florence, Italy

## \*CORRESPONDENCE

Henar Pascual  
✉ [henar.pascual@uva.es](mailto:henar.pascual@uva.es)

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# Territory in urban food policies: the case of Spain

Henar Pascual\* and Juan Carlos Guerra

Department of Geography, University of Valladolid, Valladolid, Spain

Over the last few decades, cities have taken on an active role in the formulation of food policies in line with the transition toward local, sustainable food systems. These policies have been materialized through the formulation of systemic, holistic urban food strategies. By setting up spatial, relational and organizational proximity circuits, they aim to reconnect the places involved in the production and consumption of food within the territory. The objective is to do so by interaction between the networks of actors on the different geographical scales. This article analyzes the food policies of six Spanish cities that signed the Milan Urban Food Policy Pact. Barcelona, Madrid, Valencia, Vitoria, Valladolid and Zaragoza have fulfilled their promise by formulating food strategies that set out their commitment to the construction of new, urban food systems that reconsider, from a territorial perspective, the relationship between the city and food. Using a conceptual framework that spans two well-known theoretical systems (the local territorial systems (LoTS) and the sustainable food networks (SFN)); a systematic review of the documents generated in the formulation of the urban food policies is carried out. The territorial capital linked to food is examined; the systems of actors that make up the food strategies are identified; the models of governance that the said strategies deploy and their capacity for self-organization are typified; and the potential of the public agendas for encouraging the construction of localized alternatives and the territorial sustainability of the urban food systems are evaluated. The results suggest that the Spanish urban food strategies, although conceptually inspired by the principles of the Milan Pact, are still far from possessing similarly transformative capacities. Such capacities are directly linked to the characteristics of the place: the existence of relational goods connected to food, the attributes of the territorial food capital, the density of the social capital, and the culture of the territorial planning. Beyond the generic references to the commitment to food, it is the context that determines its personality and reach, the solidity of the food governance, and the political sustainability of the processes that one wishes to set up.

## KEYWORDS

urban food policies, territorial food capital, food governance, social capital, territorial sustainability

## 1 Introduction

The change in environmental thinking that urban policies have undergone over the last few decades (Local Agenda 21, municipal environmental education strategies, local policies for mitigating climate change, municipal biodiversity plans, etc.) also include food, or rather, extend to interventions in the urban food chain systems. Without abandoning the social dimension (food safety), urban policies since 1990 have been

considering how to produce, access, consume and dispose of food; while also discussing how to intervene in each of these aspects (Mansfield and Mendes, 2013). The first municipal experiences incorporating this change of attitude were developed in Toronto (Canada) and Belo Horizonte (Brazil) in 1991 and in San Francisco (United States) in 1993. From then on, little by little, the change spread to other parts of the world. In Europe, food incorporated new dimensions related to the extension and promotion of urban and periurban agriculture; the development of alternative ways to access sustainable, healthy food; and the creation of a new territorial meaning for urban food systems (Mansfield and Mendes, 2013; Doernberg et al., 2019).

The depth of the formulation and development of urban food policies is diverse: partial or systematic and holistic approaches to the operational dimensions of urban food systems; isolated actions; singular projects of a demonstrative nature; or ordered, hierarchical and scheduled deployment. The most complex procedure for formalizing urban food policies is that of food strategies. Mansfield and Mendes (2013) define them as an official plan or road map that allows municipal authorities to integrate all the dimensions of urban food systems into a single administrative, political framework that includes food production (normally through references to urban agriculture), its processing, distribution and access, as well as the management of food waste (Mansfield and Mendes, 2013). At the same time, the strategies facilitate interaction between different urban policies, propitiate the appearance and integration of new ideas and allow needs that have gone undetected until that moment to be recognized. The strategies are therefore systematic political tools for connecting the various aspects of food and agriculture to other urban policies on a local scale: nutrition, health, economy, innovation, education, participation, social affairs, youth, urban planning, etc. (Doernberg et al., 2019).

Their holistic nature converts urban food strategies into a highly interesting object of study. By their very nature, we can recognize in them each city's conceptual approach to the major aspects concerning food and urban food systems, the extent of the agents involved in their elaboration, and the meaning and intentions of the political-administrative responses that each city council unfolds. At the same time, it is also reasonable to think that the properties of these three spheres (concepts, agents and responses) are influenced by the characteristics of the place and by the spaces created during the development of each strategy.

On the other hand, the comparative study of the urban food policies has been taken on by numerous works of research, whose main objective was to identify common traits from the perspective of transferable practices (Mansfield and Mendes, 2013; Sonnino and Spayde, 2014; Calori and Magarini, 2015; Sonnino, 2016). Very interesting contributions have come from the comparative analyses of the food strategies of the cities of North America and their potential for amplifying national efforts through the implementation of the Agenda 2030 and the SDG (Ilieva, 2017). Also worth noting are the similarities in terms of objectives and tools, the variations in the profile of the decisions taken by the local legislators of the cities that signed the Milan Pact when designing the said strategies (Candel, 2020), and the limitations in the capacity for integrating the challenges posed by the food system into urban policies, as well as the contrast between coercive and informative tools in the cities of The Netherlands (Sibbing et al., 2021) and Germany (Doernberg et al., 2019), or the

role of the evaluations that direct the food planning and policy processes, based on the experiences of cities in North America and Europe (Coppo et al., 2017).

As for Spanish cities, the contributions to the food agenda worth noting reveal a bias toward the economic and productive aspects, as opposed to those of a greater social and ecological relevance; as well as for the identification of the spheres of significant governance that transcend the merely local scale and develop the food policies' potential for sustainability (López et al., 2018; López-García et al., 2020).

Nevertheless, one of the aspects that still remain partially unexplored in research is the capacity of these policies to promote the reconnection of the different components of the food system, considering all the elements that make up and define the territory. In this sense, it is important to remember that the concept of territorialization is closely associated to the food networks which aim to connect the places of production and consumption, as well as rebuilding the connection between rural and urban areas. These networks articulate new ways to coordinate the actors that participate in a close geographical area and aim to encourage a fair distribution of the economic value of the exchanges that take place within the food chain (Sonnino and Marsden, 2006; Feagan, 2007; Goodman et al., 2014; Mundler and Laughrea, 2016; Sanz-Cañada and Muchnik, 2016; Barbera et al., 2018; Carbone, 2018).

The notion of proximity is multidimensional and constitutes the foundation upon which the organization and functioning of these networks rests, irrespective of whether physical, relational or organizational proximity is being considered (Renting et al., 2003; Winter, 2003; Maye et al., 2007; Wiskerke, 2009; Praley et al., 2014; Dubois, 2018; Kallio, 2020; Safonte et al., 2021). On the other hand, the capitalist agro-industrial system is characterized by the territorial disconnection of a globalized value chain and is not based on location. In contrast with this paradigm, the practices of the alternative food geographies can be seen as a process of relocating the food system on the basis of reconstructing the relationships of proximity between the territorial actors. Thus, multidimensional proximity is a fruitful interpretative category for analyzing food systems from a geographical point of view. From this perspective, we refer to focusing on the local territorial systems (LoTS), which consider each place as a dynamic system of specific organizational, cognitive and relational territorial resources (Dematteis and Governa, 2005). In general, what this focus aims to highlight is that the local development associated with food is a territorial and not a sectorial phenomenon; one which is derived from acknowledging that the diverse components of the food system are connected by a space and that their transversality and integration are sources of new development (Tecco et al., 2017; Dansero and Pettenati, 2018).

As pointed out by Dematteis and Governa (2005), p. 39 the territory of the local system is a construction that is realized as a result of the collective actions of the agents concerning the materiality of the places; is rooted in the past in terms of values, knowledge, institutions, and behavior; while also anchoring the development processes to the territory. The interaction between agents and places (actors and territory) is built up through a complex process that involves diverse concepts: one of an administrative nature (the territory as a space of competencies); another linked to the natural sense of belonging inherent in places (the territory as heritage or inheritance from the past); and a third which is a constructivist concept of the territory, a

social construct that creates the local identity with respect to the collective actions of the agents (the project-territory).

This interaction is studied in order to find the presence of prior conditions in the form of territorial capital that favors the construction of a local food system. This construction is not a process that can be reproduced in any context or under any conditions whatsoever; it can, however, find fertile ground for mobilizing the local network of actors; identify the potentials and limitations; and define a path through often conflicting, sometimes convergent, interests, but ones that are really present in a particular territory (Camagni, 2008; Camagni and Capello, 2013; Dansero and Pettenati, 2018).

The territory occupies center stage, since the capacity of the actors to mobilize resources in the interests of a process of change depends upon it. Thus, the history and background of the territories play a crucial role (Alberio and Moralli, 2021). In this sense, the presence and active role in bringing together public and private subjects that have produced transformative projects aimed at achieving an environmentally sustainable food model is a clue toward tracing a first geography of the territorial action that, together with the interventions of governance, constitute an indication of the capacity for local self-organization.

In addition to environmental sustainability, it is also necessary to consider the reproduction of all the components of the territorial capital, within which political sustainability acquires particular relevance (Magnaghi, 2000). The inclusive capacity of the diverse actors in the decision-making, the territorial system's degree of autonomy from the competence and financial points of view, as well as the capacity for self-organization on a local level and coordination on a supra-local level, will condition the system's political sustainability (Dematteis and Governa, 2005).

Urban food policies possess an undeniable territorial dimension linked to the very nature of the object upon which they intervene and with the spatial categories to which they have recourse. Local and nearby are notions upon which the paradigm of sustainable food is built (Fenstra, 1997; Born and Purcell, 2006; Feagan, 2007; Dansero and Pettenati, 2018); while different scales and diverse ways of understanding space converge when thinking about food and nutrition. As for nutrition, there are scales of minimums related to the physical and social fact, as well as others with a wider range of characteristics from the spheres in which the production, distribution and consumption of food take place (Tecco et al., 2017). At the same time, the properties of the food space can be understood as the distance covered by the food from its place of production to its place of consumption (Mundier and Rumpus, 2012; Timpanaro et al., 2018); as the direction and intensity of the flow of material and energy that is activated by food (Hedberg, 2020); as the area of supply from which food is obtained (Peters et al., 2009; Galzki et al., 2017; Zasada et al., 2019; Miller and Mann, 2020); or as the sphere bounded by the relations that coalesce around the food systems (Goodman, 2015; Blay-Palmer et al., 2018).

If food strategies constitute the greatest degree of formalization of urban food policies, it would seem pertinent to analyze how they transform such spatial notions as local and nearby into useful spatial categories for understanding the urban food systems and the political and administrative intervention in each of the analyzed cities (Table 1). Harvey (2006) proposed categorizing the nature of the space in three dimensions: absolute, relative and relational. The first is that of the bounded space which, among others, defines the

TABLE 1 Analytical framework (source: authors).

Properties of the food space
Territorial capital linked to food
- Natural capital and agricultural heritage
- Accumulated capital
- Social capital and capacity for local self-organization
Territorial sustainability
- Territorial capital for food production
- Short marketing channels, proximity networks and relational capital
Political sustainability
- Tools of food governance

territorial nature of the administration and sets boundaries to the spheres in which it can intervene. The second, that of the relative space, is formulated with respect to the fact that it is being relativized and who is observing it; while the third, the relational, is that category in which the space only exists within those processes that define it. Following the proposal of Tecco et al. (2017), although it suggests new, useful pairings for the territorial understanding of food strategies; we believe that its absolute dimension is to be found in the territory upon which they legally operate. The relative aspect can be found in the diverse geometries involved in the definition of the possible food catchment areas of the studied cities; while the relational aspect is encouraged by the reference system and links upon which the relocation of the urban food system is built. In other words, the first is the perfectly defined normative space for administrative intervention and is therefore subject to how efficient its execution is; the second corresponds to that in which, from the sustainable food point of view, a dynamic flow of food supply is established; while the third and last is the spatial framework created by the very fact of the food itself.

Based upon this theoretical framework, which looks at the food system in its territorial dimension, our hypothesis is that an accurate identification of the urban territorial capital and an adequate definition of the territorial sustainability mechanisms would provide consistency to food strategies. The objective of this article is to analyze the strategies of Spanish cities when applying a conceptual framework that straddles two recognized theoretical systems (LoTS and SFN) as the lens through which to see the interpretation of the different focuses and the significance of the public policies in contributing to the recent debates concerning urban food policies.

The research questions aim to understand: How food policies define the properties of the urban food space; how the city's territorial capital can be identified so as to be able to construct a local food system; what the properties of the local system of agents are that shape food strategies; and how the tools of governance can be organized in order to strengthen sustainable food networks.

## 2 Defining the objective of the study, materials and methods

The study is based on the cases of six Spanish cities that signed the Milan Pact on Urban Food Policies. Barcelona, Madrid, Valencia, Vitoria, Valladolid and Zaragoza materialized this pact by drawing up food strategies which explicitly set out their

TABLE 2 Basic data concerning the analyzed cities (source: authors).

City	Population (2022) <sup>1</sup>		Signed Milan pact	Approved food strategy	Party of city council
	Municipality	Municipality + Metropolitan Area			
Madrid <sup>2</sup>	3,280,782	6,088,164	2015	2018	Ahora Madrid
				2022	Partido Popular
Barcelona	1,636,193	3,304,275	2015	2022	Barcelona en Comú
Valencia	792,492	1,570,785	2015	2018	Coalició Compromís
Zaragoza	673,010	783,123	2015	2019	Zaragoza en Común
Valladolid	295,639	410,287	2018	2019	Partido Socialista Obrero Español + Valladolid Toma la Palabra
Vitoria	253,672	287,612	2017	2017	Euzko Alderdi Jeltzalea/Partido Nacionalista Vasco

1. Instituto Nacional de Estadística (Institute of National Statistics).

2. The change in the municipal government of Madrid has substituted the Food Strategy 2018–2020 with a new food agenda for the period 2022–2025.

commitment to the construction of new urban food systems that reconsider, from a territorial perspective, the relationship between the city and food.

The six cities are a representative sample of Spain's urban system. At the apex, we have Madrid and Barcelona, the two largest cities with the greatest metropolitan areas; Valencia and Zaragoza correspond to the first level of major regional cities; while the cities of Valladolid and Vitoria are representative of the second level of cities within a regional sphere. Barcelona and Valencia are also the neuralgic centers of the Mediterranean axis and are fully immersed in expansive dynamics. Zaragoza is the major articulation hub of the River Ebro axis which reaches the city of Vitoria; while Valladolid enjoys a strategic position on one of the principal axes of north-west Spain (Table 2).

In terms of food self-sufficiency, these cities are large centers of consumption that demonstrate a very limited capacity for supplying their citizens with food from nearby. Urban development pressure accelerated strong competition for rural land, fragmented the rural, periurban and urban spaces, and caused a great loss of agricultural land to residential, industrial and tertiary uses, as well as to the development of large communication infrastructures. The potential for the ability of these cities to provide their own food needs registers its lowest levels in Madrid and Barcelona, where the agricultural productive fabric is practically inexistent. In Valencia and Zaragoza, despite the strong reduction in agricultural land, farming is still the predominant space around most of the towns and villages, including the urban areas, and is an inseparable part of the identity and culture of each city. In Valladolid and Vitoria, the cultivated land converted to urban use is also extensive. However, within the residual nature of the agricultural sector, the cultivation of cereals predominates, as well as irrigated crops and small-scale gardens close to the rivers (Figure 1).

In this context, the urban food policies, promoted by the local governments, arise as an opportunity to offer a framework for action in order to set down the foundations for a transition to a more sustainable and healthier local agro-food environment. The design of the urban food strategies has been built up through a participative process of deliberation among the actors related to the local food system. It has been developed through the political cycle of the 'councils for change' (*ayuntamientos del cambio*) that have a progressive orientation and were fostered by the demonstrations of

citizens in May 2015 (Mériada and Tellería, 2021).<sup>1</sup> It capitalizes on prior networks and experiences of associative movements and social organizations that work for the territory's food sovereignty, with different degrees of articulation in each city, while also trying to place agro-ecological culture in the center of urban life.

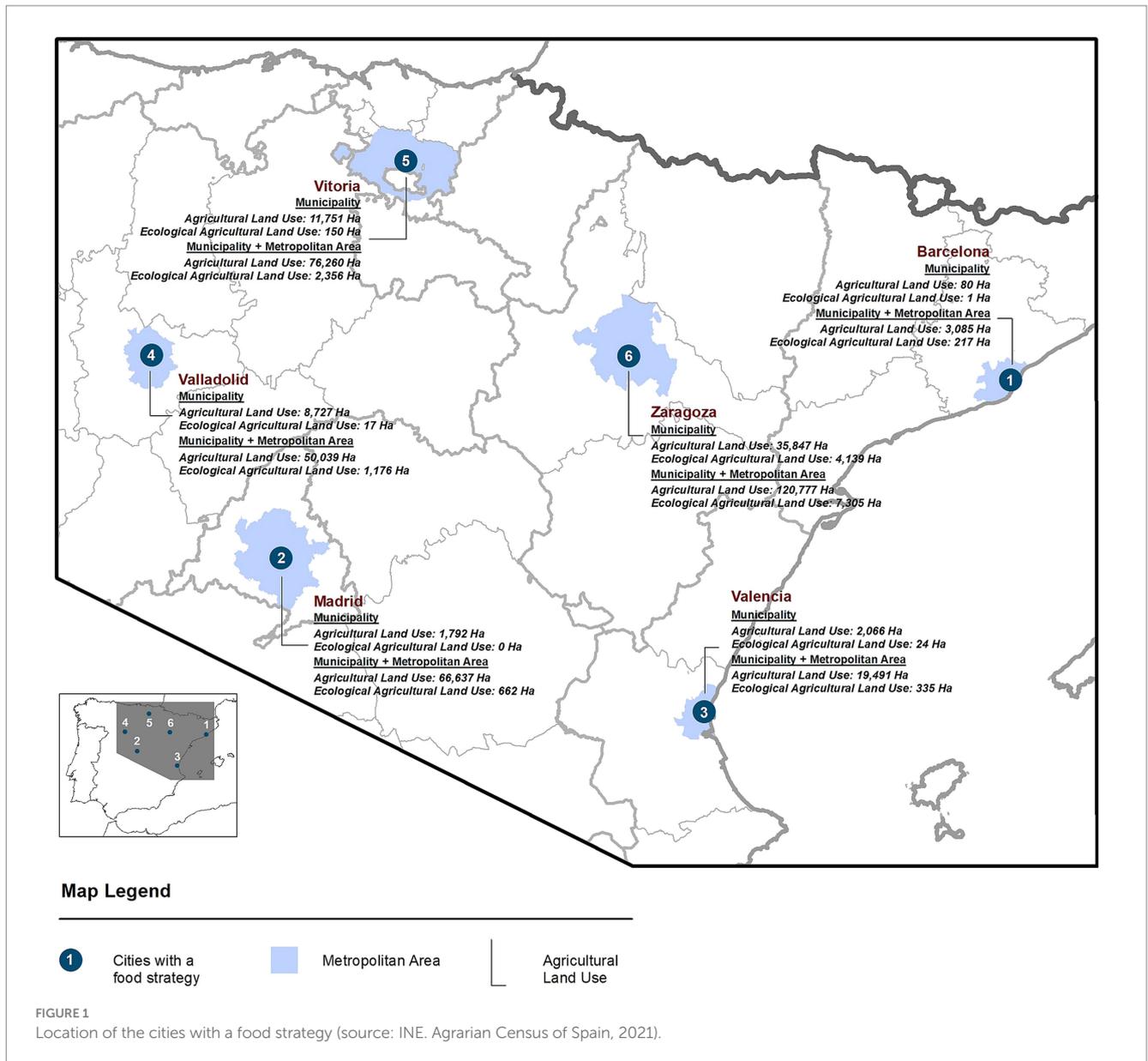
The urban food policies of the Spanish cities adopt the strategic framework for action of the Milan Pact, made up of six working axes with their respective commitments and objectives related to food governance, nutrition and healthy diets, social and economic equality, food production, supply and distribution, and the reduction in food waste.

The first phase of the research was dedicated to defining the unit of analysis made up of documents generated during the process of preparing the food strategies. They are classified in three types. (1) Studies prior to the approval of the food strategy: urban food metabolism, agricultural potential of the cities, and diagnosis of the urban food system. (2) Executive and political documents: urban food strategy, municipal plan of action, follow-up reports, institutional declarations and certificates of incorporation of the food councils. (3) Documents linked to the participative processes: materials and minutes of meetings between the agents involved and of the citizens' participative workshops (Table 3).

In the second phase, a systematic review of the documents was carried out through the selection of the content segments and their classification into the following categories: the properties of the food space, the forms of the territorial capital, the local system of actors, and the predicted mechanisms for improving the political and territorial sustainability (Tables 1, 4). An individual register of these categories was created for each city.

The third phase focuses on the comparative analysis of the registered units classified in one of the categories in order to systematize the compared observation and identify common patterns and regularities of the different cases; recognizing the significance of

1 In the case of Vitoria, the elaboration of the strategy has not been identified as originating from the 'councils for change', but through a municipal corporation that has historically been open to environmental and territorial questions in the design of its public policies.



each city’s trajectory concerning the qualities of the prior territorial capital and the local system of actors related to food; and verifying the differences in the narratives that shape the urban food policies, in both their focus and the type of initiatives undertaken to improve or reinforce the territorial sustainability of the food strategies.

### 3 Results

#### 3.1 On the properties of the food space

The normative space appears to be contained, given the operative nature of these documents, in all the strategies: it is the administrative limit of the city, the territory of the municipal administration itself. The second, however, does not appear in all the documents. Only two, those of Vitoria and Zaragoza, explicitly incorporate it; while it can be inferred somehow in Barcelona and Valencia; and is apparently absent in the cases of Madrid and Valladolid. Vitoria and Zaragoza

propose spheres that pass the municipal boundary, although they differ in their geometry and in the metrics used to define the size. Vitoria, through the definition of what is understood by local, considers a supply territory with a radius of approximately 100 km; while in Zaragoza, this figure is reduced to 20 km, coinciding with what is understood to be the vegetable gardens of Zaragoza (‘La Huerta’). Nevertheless, in this last case, the figure of 20 km is defined through a participative process integrated into the formation of the strategy, which directly links to a mental system of spaces and distances formulated in measurable terms. Even so, what is interesting about both cases is the fact that, even though both spaces are expressed as a distance, the metrics used for the calculation are different. In Vitoria, the result is obtained taking into account an ample repertory of foods; while in Zaragoza, ‘La Huerta’ only includes the supply of fruit and vegetables. What is more, in the case of Vitoria, it is assumed that the supply space can change over time, as the development of the strategy advances and the eating habits of the city’s population change (Table 5).

TABLE 3 Numbers and typology of documents and units of analysis (source: authors).

Unit of analysis		City					
		Barcelona	Madrid	Valencia	Valladolid	Vitoria	Zaragoza
Prior Diagnoses	Study of food metabolism (5)	2			1	2	
	Study of agricultural potential (4)				2	2	
	Diagnosis of the food system (4)	1			1	1	1
Executive documents	Food strategy (8)	1	2	2	1	1	1
	Municipal Plan of Action (5)	1	1	1		2	
Documents of participative processes & tools of governance	Follow-up reports (2)	2					
	Minutes of Food Councils (21)			6			15
	Documents of participative processes (51)	9	4	4	28	5	1

TABLE 4 Link between the units of analysis and the analytical framework (source: authors).

		Analytical framework LoTS			Properties of the food space
		Territorial capital	Territorial sustainability	Political sustainability	
Food strategies	Prior diagnoses	X			X
	Executive documents	X	X	X	X
	Documentation of the participative processes and tools of governance	X	X		X

TABLE 5 Properties of the food space (source: authors).

City	Dimensions of the food space according to each food strategy category		
	Absolute (normative space)	Relative (supply space)	Relational (factual food space)
Barcelona	Municipality	Metropolitan area	Exceeds the metropolitan area
Madrid	Municipality	Metropolitan area	No references
Valencia	Municipality	Metropolitan area	Equivalent to the metropolitan area, linking it to the historic system of the 'Albufera' and the 'Horta' of Valencia
Valladolid	Municipality	Metropolitan area	No references
Vitoria	Municipality	100 Km	Equivalent to the relative
Zaragoza	Municipality	20 Km	Equivalent to the relative, with special reference to the identification with the 'Huerta' of Zaragoza

In Barcelona and Valencia, the references to the space occupied by the vegetable garden are less specific. As such, this space is not specified in the texts, although it can be deduced that, for Barcelona, it is associated with the products that come from the metropolitan area and the agricultural areas it contains; while in Valencia, the same supply is limited to two spaces historically linked to the city, spaces that define it from an agricultural and food point of view: the 'Horta' and the 'Albufera'.

As for the relational space, this possesses a density and depth modulated in each city by the extent of the relations created by the urban food system with a sustainable profile. The expression of this spatial category appears through the scrutiny of those people linked to the urban food system. However, in Vitoria and Valladolid, the documentation does not provide sufficient information in this sense, and the strategies conceive food as relationally extensive spaces in which the food transcends its physical materiality to acquire multiple

values as a consequence of the different spheres in which it is present, its capacity to connect them, and the diverse meanings it can evoke. From this perspective, the relational space of healthy, sustainable food set out in the food strategies is a complex space inhabited by the same relations that are linked to the fact that the food must be produced (agriculture and animal husbandry) and transformed (agro-food industry). They are relations that possess an exchange value (commercial distribution) and multiple values connected to use that include the mercantile (restaurants, hotels, catering), the social (social economy, NGOs, social movements), and the territorial (environmental organizations, territorial culture, defense of agricultural land, etc).

If the notion of local conditions the scope of the absolute, relative and relational spaces of the food strategies, it is worth asking how these spatial categories coexist with those other categories whose profiles do not include the control of proximity; that is, what scale of

judgment is established in the documents between local and global, between the local and global food systems. In this case, the intermediation would mainly seem to be established by the type of product. The spatial categories linked to the local are reserved for the supply of fruit and vegetables, and occasionally fish, as happens in Barcelona and Valencia; while the global spaces supply the rest of the food. Thus, the strategies consider the city to be a continuous, hybrid space, as far as food is concerned, in which different categories and experiences linked to food coexist.

## 3.2 The prior territorial capital linked to food

The focus of the territorial capital contains qualities that allow us to analyze the many attributes of the territory and the complex relations that make up an intrinsic part of its essence and the basis of its reproduction. The territorial capital is defined as the system of territorial assets of an economic, cultural, social and environmental nature that guarantee the potential for development in certain places (Zonneveld and Waterhout, 2005; Perucca, 2014). Apart from the generic resources common to other places, the specific resources, naturally differentiated, are incorporated in a stable way through slow and complex historical processes and are difficult to reproduce in a different environment, because they are strongly rooted in the territory (Camagni, 2008). The specific resources are a fundamental element for understanding the territory as a social construct and they are identified with those linked to the natural capital, the accumulated material capital (not reproducible in the medium term), and the heritage as a cultural reference and legacy (Dematteis and Governa, 2005). The immaterial heritage and other intangible elements, such as the local culture, are also specific resources; that is, the community's shared values and identity, upon which the specialized knowledge and the interactive nature of the networks that make up the social capital are based.

An additional but unavoidable aspect of the social capital are the relational assets, understood as those that can be produced and used only through the relations that connect to the subjects committed to it, i.e., the producers themselves. Their relevance lies in the fact that they operate on the basis of the principles of reciprocity and horizontal associative procedures (Storper, 1997; Capello and Faggian, 2005; Donati, 2018). They are derived from the formation of interconnecting networks, are incorporated into the local cognitive capital, and in turn strengthen the conditions under which a territory develops, since their resources and actors possess an interdependent way of functioning and are, to some extent, subjective elements related to the narratives, the sense of belonging, and the image and perception of the territory. Following Raffestin (2012), the relational system is as important as the material sphere, if not more so, because the territory is the result of the production of the actors and, in this sense, the relation more than the space is the conceptual core of the territory.

Therefore, territorial capital is a concept that is both relational and functional (Dematteis and Governa, 2005) and is made up of the components that express the territorial capacities that drive the construction process of a localized, sustainable food system. The density of social capital is also related to forms of territorial governance that imply the participation in public decisions of the local agents involved in a climate of reciprocal trust and shared responsibility. The

territory's institutional strength is a factor that, in principle, can favor the advance of the development processes and the attainment of the local policy goals (Cheshire et al., 2015). Following Farinós (2008), territorial governance is a significant element in achieving political territorial goals through the creation of a shared vision based on the identification of the territorial capital. In this sense, the evaluation of the territorial capital is a fundamental factor in the emergence of an effective governance of the urban food systems, placing a value on the regulatory capacity of each territory and the local resources, thus transforming them into available resources to reach the goals of the city's food policies.

From this point of view, the analysis of the documents of the urban food strategies examines how the design of these policies incorporates the identification of the key elements of the territorial capital, as knowledge of them contributes to the activation of the forms of collective intelligence needed to carry out the decision-making processes (Safonte et al., 2021).

### 3.2.1 Natural capital and agrarian heritage

The systematic review of the documents generated in the phases prior to the elaboration of the urban food policy directives reveals the preoccupation with understanding the workings of the flows that model the food metabolism of the urban areas (Tables 1, 4). At least three of the cities (Barcelona, Valladolid and Vitoria) have diagnostic studies that include the evolution in food consumption, the entry flows to the system, the buying habits, the influence of the food distribution channels, the exit flows (trash and food waste), as well as the environmental impact in the form of the carbon, water and territorial footprints of the current food model. Alongside the abovementioned cities, we can add Valencia, Madrid and Zaragoza when the diagnosis focuses on the system's agrological capacity and the potential for urban food self-sufficiency (Table 6).

The abovementioned studies show a strong decline in agricultural land caused by the expansion of the cities, the reduction in the number of farms, and the massive abandonment of land that has given rise to a weakened, disjointed and aged agricultural sector with serious problems of generational replacement. The threat of the provision of new urban infrastructures on agricultural land raises the risk of more rural abandonment processes even higher.

The notion of natural capital is linked to the recognition of the patrimonial value of the traditional ecosystems that must support the transition toward a sustainable, local food system. Thus, faced with the pressure from urban uses that endanger the possibility of maintaining, protecting and recuperating the agricultural activities, the strategies of Valencia, Zaragoza, Barcelona and Valladolid pose, as their priority, the activation of processes that can encourage and accompany a sustainable management of the ecosystems with a high productive value that have, historically, supplied food to these cities.

In Valencia, the 'Horta', the 'Albufera' and its rice fields, the fishing port and its coastal area are all identified as strategic material heritage. In the immaterial agro-food heritage, the knowledge of those persons dedicated to agriculture and fishing, as well as their traditional forms of management, are considered to be strategic.

In Zaragoza, the urban and periurban agricultural activity also maintains strong local roots. Thus, the construction of localized alternatives focuses on recuperating the productive capacity of 'La Huerta' and the nearby rural environment, advancing toward sustainable productive models with an agro-environmental focus.

TABLE 6 Natural capital and agrarian heritage (source: authors).

City	Existence of prior diagnoses		Recognition of the value of the agrarian heritage	
	Food metabolism	Territory's agro-environmental capacity	Material	Immaterial
Barcelona	X		X	
Madrid		X		
Valencia		X	X	X
Valladolid	X		X	
Vitoria	X			
Zaragoza		X	X	X

Between 2013 and 2016, Zaragoza's city council developed the 'LIFE Huertas km0' project, which was a demonstrative experiment to recuperate the vegetable gardens as a generative space of economic, environmental, social and cultural wealth for the city. These efforts can be perceived as very positive although, in the opinion of the actors involved in the participative process, they can also lead people to believe in an unrealistic recuperation of the agricultural socioeconomic fabric, taking into account the fact that the municipality has lost most of its irrigated vegetable garden over the last few decades; while the supply of food to the city comes from places ever farther away. Nevertheless, the municipal agrarian tradition has generated a rich environmental, productive, cultural and landscape setting that has allowed a part of the municipal territory to enjoy some form of official protection, including traditional infrastructures and elements of interest for the heritage, such as the network of irrigation channels, paths, mills, towers, traditional housing and local horticultural varieties that enable the protection of the cultural, agrarian and food heritage, both material and immaterial, to be reinforced, as well as encouraging the awareness boosting processes of its value for the citizens.

In Barcelona, the loss of agricultural land has drastically reduced the supply of fresh food to the metropolitan area. In this urban region, the identification as being of great value includes such spaces as the Agrarian Park of the Baix Llobregat, the Gallegos Area of Natural Interest, the Agricultural Park of Sabadell, the Rural Park of Montserrat, the Agrarian Space of Pla de Palou in Granollers, the Natural Protected Space of the Mountains of Ordal, and the Protected Natural Space of the Maresme Coast. The continuity of these spaces is supposedly guaranteed, as are improvements to the protection of agricultural land and promoting ecological production systems. The strategy of Barcelona also warns of the reduction in traditional fishing activities, in which sustainable fishing techniques are becoming a minority. It also contains references to the intrinsic patrimonial value of the diversity of the food supply, the production of local varieties, the distribution of singular products, and the local gastronomy.

In Valladolid, the strategy identifies the traditional agricultural landscape characteristic of the river valleys where urban pressure has brought about the decadence of agriculture and significantly damaged the agricultural resources of spaces with important productive and cultural values. The recuperation of the periurban agriculture to satisfy Valladolid's food needs and to conserve the patrimonial landscape values involves an intervention aimed at ordering the agrarian activities and developing a productive model preferably based on agro-ecology.

Thus, in general terms, the documents concerning food policies draw attention to the loss of agricultural land and support the principles that inspire the recognition and preservation of the agricultural heritage, convinced of the fact that the maintenance of cultural agrarian practices, and their link to a sustainable development model, can be an important tool in the fight against the unsustainable utilization of the natural capital and environmental deterioration.

### 3.2.2 The accumulated capital: sustainable food networks, infrastructures and channels of distribution

In the food strategy documents of the analyzed cities, allusions can be found to the potentials and weaknesses of the food networks on a territorial basis prior to the formulation of the public policies, as well as numerous references to the available infrastructures and facilities for promoting the construction of new distribution channels for products of proximity. Both can be identified as accumulated capital (Table 7).

As for the sustainable food networks, their value as territorial capital derives from the existence of small, local producers and associative forms of consumption; as well as in the belief that, if they are quantitatively reduced, then they are qualitatively significant because, above and beyond the market, they are differentiated forms of territorial capital within the urban area.

It must be said, however, that the progressive increase in these initiatives and citizens' growing awareness of a more sustainable consumption result in an environment where several diverse problems converge. The small agricultural initiatives with an agro-ecological focus face numerous difficulties to reach medium term economic viability, such as the low professionalization of the agricultural activity, the scarce social valuation of the figure of the producer, the barriers to finding a way to incorporate more sustainable practices into the conventional agricultural sector, and the obstacles to advances in the coordination of the small-scale productive sector, and to articulate the different actors in the territory, both from a horizontal (to the interior of the links in the food chain) and a vertical (between the different links in the chain) perspective.

As for the distribution channels, the accumulated capital feeds upon the public infrastructures of the conventional wholesale distribution; on the network of municipal markets, the existence of a relatively dense fabric of proximity retail establishments (with an unequal presence in cities and quarters), as well as the prior existence of producers' markets and direct sales initiatives in the fruit and vegetable farms.

TABLE 7 Accumulated territorial capital (source: authors).

City	Wholesale channels		Retail channels		Informal food networks
	Specific	General	Markets	Proximity commerce	
Barcelona	X	X	X	X	X
Madrid		X	X	X	X
Valencia		X	X	X	X
Valladolid		X		X	X
Vitoria		X	X		X
Zaragoza		X	X	X	X

As for wholesale distribution, Barcelona has a Biomarket, which facilitates access to the logistic infrastructures for the small, local operators selling proximity products. The other cities stress, precisely, the absence of logistics systems adapted to those channels and the availability of large, conventional wholesale distribution installations in order to provide specific spaces in them for this function.

On the retail distribution scale, the municipal markets represent an ideal territorial capital for promoting the construction of proximity circuits. In Madrid, two municipal spaces allow the permanent, direct sale of ecological and proximity products: the Municipal Market of Vallehermoso (Chamberi) which directly distributes products coming from a radius of 120 kilometers around the city and the Agro-ecological Market of San Fernando (Lavapiés), which accepts producers from the Autonomous Community of Madrid; and other producers' markets promoted by local organizations in Arganzuela, Malasaña, Fuencarral, etc.

In Barcelona, besides some municipal markets that distribute local, fresh produce, worth noting is the network of 'Pagés Markets', supported by local entities that promote food sovereignty and with municipal aid. In Vitoria, the neighborhood markets have local roots to some extent and the 'Earth Market', managed by agrarian organizations, encourages direct contact between the producers and consumers. In Zaragoza, the main retail outlet for local and ecological food is the 'Agro-ecological Market', which has demonstrated a great potential for revitalizing the local commerce of ecological produce.

Despite the fact that citizens have more information and better knowledge concerning the consumption of local and ecological produce, it must be said that the use of the existing infrastructures and facilities should be accompanied by strategies to make agro-ecological produce better known and more visible, not only in the municipal markets, but also in the network of retail establishments that need to offer something different from the large chains of distribution.

### 3.2.3 Social capital and the capacity for local self-organization: systems and coalitions of actors

As already stated, one of the most relevant elements of territorial capital in the formulation of robust public policies is the social capital, defined as the set of norms and values that regulate interaction between persons, institutions and the networks of relations established between the different actors (Camagni, 2003; Capello and Faggian, 2005). As with urban food strategies, the territorial sustainability of projects that aim to set up locally-based productive systems is supported, among other factors, by the capacity for self-organization

of the said actors (Dematteis and Governa, 2005). In other words, following the reflections of Raffestin (1986), p. 149 the capacity of the agents to produce food territory starting from the previously analyzed spatial categories and introducing logical innovations in the places related to healthy, sustainable food.

In this case, the capacity for local self-organization becomes explicit in the food strategies through a varied set of registers: the executive documentation, the materials that recount the design and development of the processes involved, and those that describe the results of the mechanisms of governance put into operation (Tables 1, 4). The information includes the list of agents participating in the food strategy, the intensity of their commitment, the interests they represent, the opinions stated and their degree of alignment with the objectives of this public policy.

The strategies can be understood from this perspective as hybrid aggregations in which systems and coalitions of actors coexist (Table 8). That is, directories of agents connected by different values, intensity, duration and antiquity, in which it is possible to distinguish between agents with a prior shared trajectory (the systems of actors) and others joined together in an *ad hoc* manner at a particular point in time during the formalization or development of the food strategy (the coalitions of actors). In the case of Spain, both repertoires are present.

Thus, it is possible to identify prior routines derived from the experience set down in cooperation agreements, spaces for citizen participation, or other forms of territorial governance. The consistency and density of the networks is greater in the cities that have a longer history of participative production of sustainable territorial development policies and which also have a strong, dense institutional framework with respect to an alternative agro-food system. In this sense, the communal public space promoted by the City Council of Barcelona, Agròpolis, is an eloquent example. Agròpolis consists of the civil society, the economic fabric, the universities, and the municipal administration, united by the will to transform Barcelona's agro-ecological food system; so it took the decision to provide its experience and link its work axes to the challenges of the city's food strategy.

Madrid represents a singular case in this sense, as the first food policy document (2018–2020) was drawn up using the experience of the Madrid Agro-ecological platform. This was a space to articulate the different collectives and actors in order to plan agro-ecological transition processes and to propose alternatives for both production and consumption, in accordance with the objectives of food sovereignty. However, the political change in the city council gave rise to a modification in the public agenda and the drawing up

TABLE 8 Social capital of food (source: authors).

	Systems of actors	Coalitions of actors
Barcelona	Agròpolis Strategy to boost the food policy 2016–2019	X
Madrid	Madrid Agro-ecological	X
Valencia	Integral Plan of Action to Promote Agricultural and Territorial Activity Municipal Agriculture (2016) Charter for Food Sovereignty (2014)	X
Vitoria	Vitoria-Gasteiz Manifesto for a sustainable agro-food system (2014) Green Capital (2010)	X
Valladolid		X
Zaragoza	LIFE Huertas km 0 Project 'La Huerta de Zaragoza' Brand Commission on Food Sovereignty (Agenda 21 Local)	X

TABLE 9 Food social capital: coalitions of actors (source: authors).

City	Administration		Functions		Spatial categories of the agents	
	Local	Supra-local	Formal collectives	Individual agents + informal collectives	Local	Supra-local
Barcelona	X	X	X	X	X	X
Madrid	X		X		X	
Valencia	X		X		X	
Valladolid	X		X	X	X	
Vitoria	X	X	X	X	X	
Zaragoza	X		X		x	

of a new food strategy (2022–2025) that focuses on food safety in line with the Sustainable Development Objectives of the Agenda 2030.

The food strategy of Valencia is also based on learning from such previous actions as the Integral Plan of Action to Promote Municipal Activity and the Agricultural Territory (2016), the Charter for Food Sovereignty (2014), and the Charter of the Principles for Social and Economic Solidarity (2015). In Zaragoza, the relational capital built up around sustainable food took place within the framework of the 'LIFE Huertas km 0' project, starting with a participative process that gave rise to the brand name 'Huerta de Zaragoza' and the Food Sovereignty Commission of the Local Agenda 21. The food strategy of Vitoria arose from the base of the system itself, driven by the most committed actors, using the directives expressed in the Vitoria-Gasteiz Manifesto for a sustainable agro-food system (2014). It was also nurtured through the political experience for urban and territorial sustainability, with the title 'Green Capital' (2010).

For the food strategies, these experiences facilitate the incorporation of people who have already, to some extent, built up a collective identity around food sustainability. Nevertheless, the union of systems and coalitions of actors occurred at different moments during the food strategies process. This also provided a temporal dimension to the hybrid nature of the participative space created. For its elaboration, the administrations frequently relied on persons, institutions and social movements clearly committed to the different dimensions of sustainable food; while circumstantial agents were

included in its development that gradually came to be aligned with the objectives and actions of the food strategies.

The spatial categories contained in the food strategies reveal the existence of layers of agents operating on different scales or that, belonging to different scales, feel impelled to work in food spaces defined by the local and the nearby (Born and Purcell, 2006). Spain's urban food strategies generally aim to address a coherent catalog of agents with the functional and organizational complexity of the urban food system and the spatial categories with which they work. Except for the case of Valladolid, where the agents seem to be more closely related to a certain discursive affinity than to extending the food space suggested in the documentation of their strategy, the other cities' actors relate directly with the semantic fields of healthy food and the different scales in which they are expressed. Even so, it is possible to recognize some differences that can be systematized into three large categories: the extent of the presence of the administration; the functions of the food system represented in the strategies; and the presence or not of agents who operate in the mentioned spatial categories of each one (Table 9).

In the first case, the institutional representation is usually confined to the strategy's promoting agent; that is, the technical and political personnel of the administration behind each document. It rarely surpasses this sphere in any significant way. In fact, the strategies of Barcelona and Vitoria, perhaps linked to the culture of territorial planning in which both cities are immersed, are notable for the representation reserved for other administrations, whether they

be local (nearby councils, metropolitan, regional or provincial organisms, such as the Basque or Catalan governments). In the remaining cities, such an extension is not the norm. On the contrary, the presence of other administrations does not usually include the entire range of the scale of the political-administrative competences concerning food in its different dimensions; neither does it include, therefore, any effort to allow other administrations to redefine, in local terms, the competences they develop or the interventions they implement.

The catalog of agents that intervene in the food strategies can be compared to the different functions articulating the urban food system. That is, what the reiterated references in the academic literature to the co-production of the public food policies based on its multi-agent character really mean in practice. In this sense, the principal functions that are built into the food system find a voice in the elaboration of the strategies (production, transformation, marketing, consumption), as well as most of the meanings it contains (health, vulnerability, experience, territory, safety, etc.). However, not all the cities handle both diversities in the same way. In general, the strategies are constructed through formal representative models (easier to incorporate in the work of the public administrations), in which the vision of a certain sector or activity is provided by institutions with a high degree of organizational formality (associations, trade unions, business groups, etc.), trusting that this will serve as the support for transferring the opinions of a wide base to the process of drawing up and developing the strategies. Barcelona, Valladolid and Vitoria rely on individual actors to incorporate knowledge of proximity related to the conditions in which the agrarian activity immediately surrounding the city takes place; or, as is the case of Barcelona, in the capacity to generate opinions concerning healthy and sustainable food.

Independently of the collective or singular nature of the representation, a certain shift in the participation of agents in each city can be observed. In Zaragoza and Valencia, the weight of the different links in the food chain and the importance of the initiatives of civil society can be perceived. This dominates in the case of Madrid, especially those with a greater welfare profile, perhaps linked to the food safety of vulnerable collectives. In Valladolid and Vitoria, the presence of persons directly linked to the municipal administration is significant. Lastly, Barcelona stands out for the variety of agents represented.

Finally, it would seem opportune to compare the catalog of agents with the spatial categories that the strategies work with. From this point of view, the relational space defined in them comprehensively surpasses that of the political-administrative intervention of each city council (the normative space) and, although the cities are aware of this fact, they also demonstrate certain difficulties in incorporating agents from this space, particularly in those functions directly related to food production and supply.

As with other aspects, in this case, it is also possible to recognize some differences. The relative spaces in the strategies of Madrid, Vitoria and Zaragoza are, respectively, the metropolitan area, a space with a radius of 100km around the city and one of 20km that coincides with the existence of the vegetable garden. Nevertheless, the origin of the agents who participate in them does not surpass the municipal limit. In the case of Barcelona, there does not seem to be such an intense decoupling. The normative space is the municipal space, but there are constant references to processes that take place in

the context of the metropolitan area and to resources for food that are shared within it (agrarian parks, distribution structures, etc.). The agents that participate in the strategy of Barcelona, perhaps better than in any other case, respond to the different meanings of food and to the concrete territory in which these meanings are generated.

### 3.3 Enhancing the territorial sustainability of the food strategies

In order to verify whether the food policies contain mechanisms to reproduce and enrich the territorial capital, we now analyze the potential of the public agendas for favoring territorial sustainability, defined as the autonomous capacity to maintain and enhance the territorial capital in a dual sense: to mobilize and transform the specific resources of the territory into values, and to incorporate new value in the form of incrementing the territorial capital (Dematteis and Governa, 2005).

#### 3.3.1 The territorial capital for food production

A first consideration to take into account is the idea that rethinking the planning of the central role of cultivating agro-ecological food to feed an urban region represents one of the most difficult challenges for the food policy, because the reality is that there is a general lack of available land and adequate infrastructures. In this sense, “agro-ecological urbanism” makes the structural dependence on land for food production a question of concern and political debate. This is because, faced with the logical speculation over land, it aims to promote non-extractive practices to protect the land and to encourage new means of agricultural life focused on real communities and places (Tornaghi and Dehaene, 2020). For this reason, the path that leads to the construction of local food systems involves promoting initiatives that facilitate access to land in a collective process that provides local producers with resources to nourish and reproduce a sustainable territorial capital in the long term.

In order to slow down the generalized tendency to expand urban uses onto agricultural land and thus propitiate the increase in agro-ecological land, the narratives that act as a framework for urban food policies propose a range of actions that can have a widespread conceptual reach, all aimed at promoting the increase in the productive capacity managed sustainably, either within the cities themselves or in the surroundings. The foreseeable measures include legal protection for agrarian spaces as being essential for the conservation of the agro-biodiversity, access to public lands through the transformation of municipal plots for urban allotments or kitchen gardens, the creation of land banks, assistance for new producers, or the supra-municipal planning of productive agro-ecological spaces (Table 10).

In general terms, the set of cities analyzed generically posits the determination to adopt protective measures for agricultural lands bounded by the urban area. This can increase the land for cultivation through municipal programs to encourage agro-ecological horticulture and to develop projects that facilitate the professional incorporation of new persons to the agricultural activity through assistance in the form of technical agricultural assessment and entrepreneurship. One of the key questions identified is access to the land for the vocational initiatives in ecological farming. In this sense, in their policies, Valencia, Vitoria and Valladolid formulate the

TABLE 10 Territorial capital for sustainable food production (source: authors).

City	Protection for agrarian land	Land banks	Urban kitchen gardens	Conventional agriculture reconversion	Agrarian lands on a supra-municipal scale
Barcelona	X		X		X
Madrid	X		X		
Valencia	X	X	X		X
Valladolid	X	X	X		
Vitoria	X	X	X		
Zaragoza	X		X	X	

creation of municipal land banks to make agricultural land available to new agro-ecological producers on public lands.

Regardless of the difficulties involved in developing this kind of initiative, the local scale of urban horticulture and land banks is still far from the real proximity food production and supply needed to cover the urban demand, even partially. Inter-municipal articulation and cooperation for the construction of food systems focused on the food basins is essential (Mouléry et al., 2022; Vicente-Vicente et al., 2022). However, most of the cities analyzed in this research lack effective figures of territorial and administrative coordination with their surrounding municipalities. This limits the possibilities of building sustainable, local food systems and explains the vagueness in the statements that refer to the actions to promote and expand the agro-ecological productive activities, giving them a greater scale. For instance, Madrid foresees that at least 500 hectares could be destined for ecological agriculture, although the concrete measures needed to achieve this are not established. Somewhat more specifically, the strategy of Zaragoza identifies support for the conventional agricultural sector and its progressive conversion to agro-ecological models, the strengthening of the vegetable garden network, and the creation of agrarian parks in the city and the surroundings as a priority line of action.

Nevertheless, the design of localized food alternatives requires the deconstruction of the rural–urban dichotomy as a first step toward creating equitable and inclusive food systems (Vaarst et al., 2018). Establishing supra-municipal agreements with different spatial configurations must form part of a consistent agenda with its own context through the coordination of multiple actors in both rural and urban areas. In this sense, only the cities that have institutional structures for metropolitan planning, or legal instruments to protect agrarian land, can formally propound actions focusing on the revitalization of the professional agrarian holdings of the periurban setting, or on the creation, within its sphere of influence, of agrarian parks with formats adapted to the local reality. Such is the case of the Territorial Plan of Action for the Management and Revitalization of the ‘Horta’ of Valencia,<sup>2</sup> which establishes the prevalence of agricultural activity over other uses, defines the legal use of the lands, and contemplates a collection of measures to protect and recuperate the environmental, landscape and cultural values, in order to integrate a green infrastructure on a supra-municipal scale, and to encourage good practices in traditional, sustainable and ecological agriculture.

Where the supra-local perspective is most evident is in the food policy of Barcelona, starting from the commitment of the Metropolitan Area of Barcelona (MAB) to the Food Charter of the Metropolitan Region of Barcelona and to the project Barcelona World Capital of Sustainable Food 2021. The MAB has a Plan of Action for Sustainable Food that constitutes the first instrument of transversal coordination, with a global focus on the food system.

### 3.3.2 Short marketing channels, proximity networks and relational capital

The construction of territorial capital for proximity food production can be increased through actions to diversify the short distribution channels, or the revitalization of those already existing. It is a question of shortening the food chain and providing balance for the distribution of value between the different links in the chain. However, it also aims to favor spatial proximity so as to foment interactions between the actors that participate in the network and to establish cooperative links for the territorial projects that aim to create new relationships between urban and rural areas (Dansero and Pettenati, 2018; Chiffolleau and Dourian, 2020).

Taking into account the importance of the physical space in which the networks are developed, the food strategies designed by the cities share actions to promote markets for direct sales, such as the Agro-ecological Market of Zaragoza, the Eco-market of Valladolid, the Basaldea project of Vitoria, or the numerous open-air markets in the different quarters of Barcelona, Madrid and Valencia (Table 11).

These non-permanent markets are not only places to buy and sell food or places of spatial proximity between producers and consumers, but also meeting places and places for exchanges between those who live in the same quarter of the city, or even among the producers themselves. Besides shortening the food chain, the proximity of the network goes beyond the reduction in the distance between production and consumption to generate rural–urban proximity food circuits that involve different categories of actors and multiple forms of creating territory (Lanzi et al., 2021). The relational process of buying in the markets generates and enriches the social capital of a community action rooted in the sense of belonging to a collective movement, or adherence to specific values and lifestyles (Alberio and Moralli, 2021). Buying food becomes a political action and, from the relational perspective, the social value that arises from the interactive reflexivity of these links reinforces the cognitive proximity between the actors. The connections are multiple; among others, producers who share the same vision of food production, the transfer of knowledge to the small-scale farmers who find it difficult to access information, or awareness of the reciprocal impacts between consumers and producers (Donati, 2018; Vaarst et al., 2018).

<sup>2</sup> Planned in the Law 5/2018, of 6<sup>th</sup> March, concerning the ‘Horta’ of Valencia.

TABLE 11 Relational capital (source: authors).

City	Markets of (agro) ecological producers	Storage centers	Collective workers	Sustainable public purchases	Practice/learning communities
Barcelona	X	X		X	X
Madrid	X			X	X
Valencia	X	X		X	
Valladolid	X	X	X	X	
Vitoria	X		X	X	X
Zaragoza	X	X	X	X	X

Together with the measures aimed at boosting this kind of market, the political documents pose the need to diversify the distribution channels so as to expand and facilitate multimodal access to fresh food, thus encouraging the establishment of links with different actors in order to strengthen the local food systems. Among them we can note the commerce of proximity, the municipal or neighborhood markets that have an ample network of nearby distribution points, although often weakened by competition from the large chains of distribution, and the changes in buying habits and models of consumption. The six cities propound developing actions oriented toward these objectives, as well as establishing cooperative links between sustainable producers, the local hostelry sector, and social associations committed to the networks. Public purchases to provide nursery schools, social dining rooms and health centers for the municipal network are also prioritized; while also encouraging good practices and making them more visible in the form of healthy nutrition and responsible consumption.

Aside from other difficulties related to the limits of the municipal competences or the need to adapt regulations and norms, the reproduction of this territorial capital has to face the fundamental challenge of scale. A small, fragmented supply has to accommodate this potentially growing demand (markets, hospitality sector, retail commerce, hospitals, schools, etc.); as well as offering a varied range of products, maintaining a regular supply, and generating trust and safety along all the links in the chain. The response of the urban food policies is to design formulas for concentrating the foreseeable supply through the conditioning of specific spaces in the form of food-hubs in the logistic installations of the conventional wholesale distribution. In order to understand the demand more effectively and to better manage the short circuits, Zaragoza, Valladolid, Barcelona and Valencia conceived projects, started by and with the participation of the city councils, in their wholesale infrastructures. In Madrid, these actions took the form of promoting and setting up logistic warehouses and last mile spaces, including a pilot project for sustainable distribution in the Market of Barceló and the design of a distributed system of urban logistic microcenters. In a complementary manner, some cities also programmed the municipal spaces to house local, small-scale agro-industrial projects (Madrid) and multiproduct, workers' collectives (Valladolid, Zaragoza, Vitoria).

These food-hubs constitute innovative organizational agreements to create networks, through aggregated scaling, that allow the producers to combine their products so as to be able to gain access to wider markets, face the growing demand from individual consumers, or groups of consumers, for local products (scale-out) and from wholesale buyers to achieve wider systemic impacts (scale-up). The resulting territorial capital increases the complexity of the local

networks and gives rise to new proximity networks among the actors who wish to increase their effectiveness through coordinated logistical actions. What the articulation of these forms of horizontal coordination is looking for is not only the distribution of food, but also the construction of social connections to distribute shared value through the aggregation of products from independent actors without diluting their identity (Berti and Mulligan, 2016).

Additionally, the narratives that make up the urban food strategies stress the crucial role of the construction of communities of practice (CoPs), collective learning and the creation of specific knowledge to articulate the configuration of contextualized food systems. Unlike the large-scale, conventional food system, uncoupled and lacking in direct interaction, the local food system, anchored in proximity circuits, has the potential to stimulate the formation of feedback loops of resources and the collective awareness of the actors in the network, nurturing the social capital and the relational assets generated. In order to reinforce these processes, the strategies propose institutional support and the revitalization of experimental spaces concerning food and agro-ecological production. The practical, learning communities linked to the neighborhoods and the district food hubs planned in Madrid, the 'Huerta de Zaragoza' brand, or the agro-ecological incubators planned in Barcelona and Vitoria, are significant examples of these actions.

### 3.4 Political sustainability and tools for food governance

The re-territorialization of the urban food systems provides new layers of meaning to food governance. Moragues-Faus et al. (2017) define it as all the forms of government developed by different actors to guide, direct or control achieving food safety, to which López-García and González de Molina (2020) add their operative dimension as the coproduction of public policies, together with the civil society and the articulation of city and country. Coulson and Sonnino (2018) include the relational character of governance, understood as the meaning acquired by the political, economic and spatial context, so as to be able to understand the possibility of producing systemic changes in food. In its most recent formulation, urban food governance appears as a complex product that must be managed according to the political and contractual meanings acquired by the time (understood as the context and the possible future), place, relations, diversity and power (Moragues-Faus et al., 2023).

From this perspective, it is necessary to understand whether the mechanisms of citizen participation, in the terms set out by Uphoff (1998) and Jenkins-Smith and Sabatier (1993), contribute to the

creation of social and territorial food capital, and to the construction of organizing systems and useful values for all the agents who participate in the elaboration and development of the food strategies.

From a practical point of view, [Candel and Pereira \(2017\)](#), [Young et al. \(2022\)](#) and [Moragues-Faus et al. \(2023\)](#) analyze the practical utility of the different tools and solutions for food governance; while [López-García et al. \(2020\)](#), p. 9 propose that the study of urban food governance should be carried out taking note of the existence of measures for multi-actor, inter-sectorial and multi-level coordination in the administration, community activation, commitment to city networks, and the existence of monitoring and evaluation frameworks. In other words, the democratic qualities of the public policy that are set up; the existence of administrative coordination mechanisms, the forms and tools for monitoring and reviewing the strategies, and lastly, the participation in local authority networks.

The schemes of governance proposed by the six cities are relatively similar; although their components may have different names. As pointed out in the section dedicated to the agents integrated in the strategies, their participation has been channeled through open processes of different magnitudes, diversity and complexity. The follow-up is usually done through the technical assistance that is in charge of revitalizing the food strategy, accompanied by a reduced number of agents representative of the food system, divided into two groups: a driving group and a follow-up group. Finally, there is a more ample space, usually called a food council, although there are other terms, such as 'city agreement' (Barcelona) or 'city forum' (Madrid).

At the same time, all the cities considered it convenient to create a system of indicators in order to evaluate, in line with what is desirable in the development of public policies, if the acts and products foreseen in each food strategy had the desired effects and whether it is necessary, therefore, to correct any deviations that may have occurred. From a practical point of view, the proposed evaluation methods mostly used what is called the experimental attitude ([Ogando and Miranda, 2002](#)); that is, to discover if there are direct, stable coincidental relations between the contents of the public policy (as foreseen in the strategies) and the effects observed in the cities. The metrics used, in the Spanish case inspired by the proposal developed by the Milan Pact on Urban Food Policies, the RUAF Foundation and the FAO ([Carey and Dubbeling, 2017](#); [FAO, 2018](#)), stress the need to grasp the dynamics occurring between the processes related to food systems, nutrition, health, social change and impacts, and the social and territorial impacts ([Beddington et al., 2012](#); [Tilman and Clark, 2014](#); [Allen et al., 2016](#)).

Finally, one of the characteristics that define the new food governance is translocalism ([Sonnino, 2017](#)). This term defines the flow of knowledge, learning and practices that, starting from a particular city, spread to other locations, thus allowing the construction or reinforcement of sustainable food systems ([Blay-Palmer et al., 2016](#); [Sonnino, 2017](#)). The most common form of translocalism is the creation of new relational identities through participation in the networks ([Sonnino et al., 2016](#)). The documentation of Spain's urban food strategies show how the municipal administrations participate in a common repertory of channels of diffusion and reproduction of knowledge concerning sustainable food systems. All the cities have signed the Milan Pact on Urban Food Policies and, with the exception of Vitoria, have also officially joined the Network of Municipalities for Agro-ecology, an

association of local Spanish entities, similar in its objectives to the Sustainable Food Cities Network in The United Kingdom. The association states its goals as "the generation of a dynamic between Spain's cities in order to build up local food systems" from a sustainable, resilient and inclusive perspective (Statutes of the Cities for Agro-ecology, art. 5.1).<sup>3</sup> The open work dynamic within this network, organized around annual meetings, work groups, and with the support of a technical secretary, facilitates a fluid contact between all the participating cities, exchanging experiences, looking at practices and in joint discussions.

To these two translocal channels, specifically focused on food sustainability, two more can be added that have a complementary value. Barcelona, Madrid, Valencia, Valladolid and Zaragoza participate in the network Eurocities, an initiative under the umbrella of the European Commission. Its generic objective is to ensure a good quality of life in Europe's cities. Part of its work includes urban food systems. At the same time, Valencia and Valladolid receive flows of information through their participation in the Intervagas Pact, a Spanish platform made up of persons, associations and public administrations that promotes the protection and revitalization of the most fertile agricultural lands and the periurban agrarian space. Madrid possesses a set of agreements with the FAO, and Zaragoza participates in the network of cities in the Global Covenant of Mayors for Climate and Energy.

This account of the initiatives underlines, in this case, the idea of translocalism in the new urban food governance. However, it should be asked whether this same principle extends to the actors who participate, either partly or totally, in the strategies. That is, if the vector of translocalism refers solely to the administration, with its filters and conditioning policies, or whether spaces with a more open, diverse profile, without necessarily the same degree of formality, also contribute.

## 4 Discussion and conclusions

Food strategies possess an undeniable territorial dimension that can be analyzed by applying a conceptual framework that spans two well-known theoretical systems, LoTS and RAS. We understand that this territorial dimension is directly linked to the objective of setting up local systems that revolve around proximity food, upon which a great part of access to sustainable and healthy food relies. In fact, the main effort of the strategies is in this sense: to mobilize and coordinate natural and social productive resources within the logic of the alternative food systems.

We agree with [Tecco et al. \(2017\)](#) in the utility of the LoTS model for its application to studying urban food policies. In fact, we consider that this model facilitates an understanding of the food strategies by proposing the networks of agents who operate in a particular territory and the territory itself, understood simultaneously as a historic

<sup>3</sup> The Spanish cities that signed the Milan Pact are Barcelona (2015), Bilbao (2015), Madrid (2015), Málaga (2015), Rivas Vaciamadrid (2015), Valencia (2015), Zaragoza (2015), Denia (2017), Fuenlabrada (2017), Godella (2017), Granollers (2017), San Sebastián (2017), Vitoria (2017), Valladolid (2018), Cádiz (2021) and Sevilla (2021).

construction and as a model for the local resources to use, as the primary objects of the study. From this perspective, *a priori* and beyond the generic references to the commitment to food, it is the context which determines the extent, solidity and sustainability of the processes to be set up.

All the strategies transmit an understanding of space, whether it be in its absolute, relative or relational dimension. The metric translation of each one entails a problem. If the municipal administrations are aware that the processes they aim to encourage surpass the sphere of their competences, and that the relative and relational spaces they are working with also exceed their territory; it is reasonable to think that the strength of the strategies is reinforced if they are able to introduce mechanisms that allow some kind of operational connection between the said spaces. In this sense, Spain's food strategies are not excessively robust. They rely on a generic appeal to cooperation between administrations for managing the overflow of competences from working with the food question; while the connection between spaces is only relatively present in those cities that are used to working on planning processes with supra-municipal, mainly metropolitan, coordination.

The analysis of the documents reveals that the territorial capital linked to food is identified with unequal consistency. The diagnostic studies deal in depth with the complexity of the urban metabolism and the agrolological capacities of the cities. However, the main results are not transferred to the strategy documents, although there does exist the recognition of the weakness of the cities' natural capital due to the expansion of the urban uses. Allusions are also made concerning the urgency of defining the adequate political processes to control or reverse this tendency, in addition to starting up environmental restoration policies and the sustainable management of ecosystems with a high productive and heritage value that historically provided food to these cities. Nevertheless, the documents do not contain specific measures in line with the need to counter the unsustainability of the natural capital; nor do they define the resources that have to be mobilized to protect or recuperate productive agrarian spaces.

The food strategies examined show a precise definition of the accumulated territorial capital. They identify the city's existing food networks based on the territory and they define the available facilities for promoting the construction of new distribution channels for proximity products. Furthermore, an accurate diagnosis of the strengths and weaknesses of the specific urban-based territorial resources can be observed. Outstanding among the strengths are the progressive increase in agro-ecological initiatives and the existence of innovative, quantitative, reduced, but qualitatively significant, alternative food networks. The added value of the ecological products in social and environmental terms and the values of trust and transparency in the short proximity circuits constitute a strengthening factor in the process of constructing sustainable food systems that favor local agriculture. The appreciation of local products is also favored by the factors of identity and culture. The weaknesses, however, can be seen, in particular, in the difficulties that agro-ecological initiatives face to achieve economic viability in the medium term, the barriers that more sustainable practices face to entering the conventional agricultural sector and the weakness of the stable structures for coordination between the different food movements. In this sense, it can be expected that the food policies should contribute to reinforcing the articulation of local actors, both from a horizontal

perspective (to the interior of the links in the food chain) and a vertical perspective (between the different links in the chain).

As pointed out by [Alberio and Moralli \(2021\)](#), the trajectory of the territories plays a crucial role in the creation and self-organization of the social capital. This trajectory is, in some cases, in line with many plans of the food strategies (continuity in a productive fabric, permanence of a functional vegetable garden space, administrations in which the development of participative public policies is normalized, etc...); however, in other cases, this tradition does not exist or has ceased to be functional. In this latter case, food strategies, such as that of Valladolid, have serious difficulties in their development, which are perhaps not well gaged in the documents on which they are based. In fact, the different documents used in this work show how the interactions of social capital increase and the sustainability of the processes set up by the strategies are enriched in favorable contexts, known for the presence of a dense food territory in which a large part of the meanings and dimensions of sustainable, healthy, alternative food appear and interact.

As for the expected actions to promote the territorial sustainability of the food system, we can observe some formulations that lack accuracy. The mechanisms for constructing the territorial capital to produce sustainable proximity food are limited to the normative spaces of the projects. The introduction of the food perspective in urban planning is necessary in order to advance in the construction of food facilities and funding. However, there are hardly any few definitions of the incorporation of the criteria for food sovereignty in the urban and territorial plans displayed in the municipal sphere; nor are there territorial planning tools that guarantee the security and permanence of the municipal agricultural lands.

The strategies mention the holistic focus of the policies, but this is not translated into concrete actions that really integrate the diverse dimensions of sustainable territorial planning in order to deal with the challenges inherent in food. The coherence of the policies and the integration of the food strategies in wider plans are fundamental elements in the design of robust, local alternatives that can reinforce the urban-rural links and favor the reconnection of the food chain in the spheres of production, distribution and consumption. However, the lack of regular collaborative dynamics and spaces, the diversity of interests, and the differences in competences between the public administrations make the articulation of the scales (local, metropolitan, and regional) more difficult. This is also the case with the coordination of the actors in the food system, considering the interdependencies and the possibility of developing agro-food initiatives with an integral vision. In this sense, it is fundamental to provide a solid mechanism for coordination that can articulate the competences that are being distributed between the diverse administrative authorities in order to ensure the political sustainability and operational effectiveness of the food agendas.

Finally, the strategies are elaborated and developed using a similar range of governance tools for all the studied cities. They are also similar, on the other hand, to those used in other places ([Doernberg et al., 2019](#)). They all take advantage of participative processes with a similar conception and development that, although it may seem excessive to qualify them from bottom up, it is true that they respond to open models of administration, in line with previous experiences that surpass the representative model, to delve into procedures that aim to provide a greater democratic and social legitimacy to the maximum exponent of urban public policies concerning food.

## Data availability statement

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

## Author contributions

HP: Writing – original draft, Writing – review & editing. JCG: Writing – original draft, Writing – review & editing.

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