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TOWARD THE LOCAL TERRITORIAL FOOD SYSTEM: SPACES OF ANALYSIS AND ACTION

Introduction. – In the structure of this monographic issue, focused on the relationship between food and city, this article ⁽¹⁾ focuses on the reference spaces for urban food policies.

Although the latter are the result of both public and private practices and proposals, and they cannot be reduced solely to the initiative and to the field of action of the local authorities, typically the Municipalities, the Metropolitan Cities and any institutionalised aggregations (such as the Unions of municipalities) or to the field of design (although made formal, such as the territorial pacts), it is evident that a territory of reference is fundamental. It is therefore a matter of comparing the scales of institutional competence, with the relevant scales for local policy interventions on the food system and of understanding how their territorial intra and inter-urban coordination can be obtained, as desired, respectively, from the reflections on the *City Region Food System* (see p. 27) and from the *Milan Urban Food Policy Pact* of 2015 (see the introductory article of this monographic issue.)

Following this logic, it becomes important to understand how analytical perspectives of study and evaluation of the food system in a given territory, and design and policy perspectives cross each other. In what way we can speak of the urban or local system of food, or even of a local food system?

In recent years multiple studies and insights have been published on food systems, which have seen the proposal of a plurality of paradigms for the analysis and planning of territorial food systems. The objective of this paper is to perform an acknowledgment and systematisation of different theoretical and operational approaches that encode the relationship between space and food system and that are, or could be, used for an urban or local food policy. To this end, we will start from a more general and abstract idea on food spaces, and on their general and metaphoric significance, to deepen the main approaches to spatial processing of the food

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system that are present in literature and in the experience of *urban food planning*, (Moragues *et al.*, 2013; Morgan, 2009) considering their evolutions and reciprocal hybridisations.

Finally, we will try to propose a theoretical and operational definition of territorial local food system, as an assumption and at the same time as an outcome of the thinking and action for an integrated project and a local food policy.

The spaces of food. – Space and food are closely connected: the production, processing and consumption of food occur in specific areas and they are determined by them and, in turn, they structure and give shape and content to those same spaces. The link between food and space permeates and gives shape, at many levels, to our lives and the organisation of the territories itself.

In front of the food we eat, the question on its origin allows us to connect a plurality of scales in which scales of competence, scales of organisation and scales of action of the processes linked to the food system intersect.

To talk about the spaces of food means taking into consideration first of all the physical spaces and the entire spectrum of their scales and of the food system phases. As consumers, we can focus our attention on the mouth, the minimum scale and the essential space of food, a first instrument of knowledge of the world, to broaden our view toward the plate, the table, the local restaurant, the urban and non-urban districts of widespread and specialised catering, the spaces and the functional value chains that have brought food to our plates, up to the wasted food and the spaces for its disposal. By adopting, instead, a perspective that is more centred on production, we can ask ourselves how a city is nourished, thus approaching a plurality of spaces, players and local and global processes, in which food takes on different meanings and different states, ranging from idea to project, from produce to product, from raw materials to post-consumption waste.

If, from the consideration of just the physical spaces, we expand our gaze by including spaces in a gradually more metaphorical sense, we can easily realise how the «space» dedicated to food is particularly extended: it deals with social spaces, in their different significances, from culture, to economy, from politics to religion. Food occupies such a large space in our daily lives, as well as in the social and public sphere. Think about how the ordinary day is marked by the timing of food and by the spaces dedicated thereto, with all the cultural and social aspects of food and particularly the values of conviviality, that are extremely differentiated from culture to culture. If we go beyond the daily routine time, we consider how even times and spaces of extraordinariness find a structure around food, through the characteristics of rituality and exceptional nature of many festivities, from family and neighbourhood ones, to town festivals, up to the great theme events linked to food (Expo 2015 and Terra Madre-Salone del Gusto above all).

Food has increasingly become a subject of intense public debate and occupies a growing position in media, with a progressive sensationalism, particularly of culinary art. Food is increasingly spoken about with a crescendo of information, but also of trivialisation.

If we consider the extension and the organisational complexity of the food system, it appears that the relationships between food and space, in which these two elements bind, structure and give shape to one another, are characterised in recent decades by powerful and pervasive tensions and processes, pointing in opposite and contradictory directions. On the one hand, the presence of globalising dynamics threatens to cause a progressive abstraction

of food spaces. It is an ongoing process of de-territorialisation, de-connection and de-localisation of production and partly also of the consumption of agri-food products, starting from those that were once dense territories, places of production, and transformation (Wiskerke, 2009). What we eat reaches our tables today through the action of complex value chains, articulated on scales that are tendentially global, with an increasing homologation of food spaces. Many of the innovations or alleged progresses in agriculture had as an objective a greater control of the environmental factor to achieve a greater abstraction from the conditionings that are not only environmental but also economic, social and cultural of the different agricultural territorial structures: in this sense we are witnessing a progressive reduction of the diversity of the spaces of production (and consumption) of food towards a space that tends to be increasingly single, isotropic and uniform, as suggested by many landscapes (*foodscapes*) of the main agricultural commodities (from corn to soybeans).

On the other hand, widespread processes of opposite nature are increasing further, thus focusing on relocalisation, reconnection and reterritorialisation, in alternative geographies of food (Roep and Wiskerke, 2012), where the multidimensional proximity (i.e. intended both in spatial sense, but also in terms of cultural identity etc.) becomes an instrument and value in itself (Dansero, Pettenati and Toldo, 2016). Phenomena such as the food crisis that occurred in 2008-09, have brought to light the fragility of the global food system (Sonnino, Faus and Maggio, 2014) stressing the need for a food governance that is more reflective and better place-based (Marsden, 2012).

In other cases, still, globalisation processes and reterritorialisation may cross each other thus originating hybrid phenomena. Within these dynamics of the food system, the different players, in an attempt to adapt to constantly changing contexts, establish multilevel relationships and become part of food systems that can take up different configurations, including the presence of local and global systems (Brunori *et al.*, 2016) or global, metropolitan and local food networks (Monaco *et al.*, 2017).

Starting from food, reconsidering the spaces: some analytical perspectives. – Food is thus closely linked to the spatial dimension. For this reason, we believe that the concept of space can be used as a privileged interpretation, to analyse and discuss the different perspectives, that are present in the vast scientific production, that focuses on *food phenomenon* understood in its various meanings.

In this sense, we think it is important to recall briefly a schematisation of the concept of space, proposed by Harvey (2008), which considers three main ways of conceiving space:

- *Absolute space*, understood as topographic, like with Newton and Descartes, as a fixed background on which to measure and report items and events;
- *Relative space*, to be understood in the sense of topology, as a space of flows (of matter, energy, information, people, money, etc.) and as a space of distances (in terms of time and cost, energy consumption etc.);
- *Relational space*, i.e. space of relations, in which each point is characterised by the combination of social relations that are based on it and by the symbolic stratification embedded within the man modified environment.

Particularly within the scope of the geographical and territorial reflections, the studies that focus on the food system very often use terms that have a direct spatial connotation:

place, region, local scale, border, landscape (specifically the concept of *foodscape*, see article by Pettenati, in this monographic issue), and other, less direct ones, which nevertheless always have strong spatial implications such as: network, flow, shed, system, chain. This is a reflection of the presence of paradigms, metrics and visions of different food spaces, characterised by similarities and overlaps, but also by differences and conflicting visions.

Here are some of these approaches that analyse the link between food and space, with particular attention toward a perspective focused on urban food policies.

We are going to illustrate the different proposals following an order (although not completely systematic) of increasing complexity: we will begin by explaining those interpretations that use a simpler space concept, understood, for example, as a one-dimensional topographical space of distance between points (*food mile*), to broaden the analysis toward approaches that refer to the topological descriptions and relational spaces of food, up to a discussion on the most recent works which claim the substantial difficulty in grasping the complicated relationships that characterise food supply chains at different scales, hence proposing new perspective interpretations of food spaces that are in continuous change.

The zero and one-dimensional space of physical distance. Amongst the more simplified representations of food spaces we can indicate the one summed up in the idea of «km zero», which indicates those cases where the places of production and consumption coincide, zeroing (at least in theory) the environmental impacts of transport. In recent years, the proposal of «km zero» has progressively spread, because of its simplicity and its apparent ease of application: today many players in the food supply chain (restaurants, shops, fairs, etc.) refer, sometimes distortedly, to the «km zero» paradigm.

At the base of this concept there is the implicit assumption that the world of food and the relationships it entails can be reduced, at least symbolically, to a zero-dimensional topographic space: a simple point where all activities related to food are located. In reality, this interpretation is likely to produce simplified and trivialising visions, in which the complex dynamics that can generate environmental impacts are not taken into consideration, even in cases of simple spatial proximity. The same operational translation of this paradigm (in specifications of school canteens, but not only) forces to abandon the idea of a null distance and leads to the definition of spatial areas (for example with radiuses of 50-100 km) within which food is considered, by convention, «km zero».

The proposal of «km zero» is a limit case that falls within a wider representation, which favours physical distance as the only parameter. This is an interpretation that reduces the complexity of the world of food to a one-dimensional topographical space, wherein every other aspect is neglected. This approach, summarised in the concept of *food mile*, started spreading from the 90s to meet a remarkable success (DEFRA, 2005). The indicator, in its initial formulation, considered exclusively the kilometres travelled by food along the production supply chain to reach the final consumer, thus assuming a simple linear relation between food transport and environmental externalities. These kilometres could also be converted into emitted CO₂, on the basis coefficients of emission, that are constant and independent from the means of transport and the technology used. This type of analysis has allowed us to bring to light the effects of globalisation on the food system, but exclusively from the point of view of transportation energy consumption.

Multiple studies have highlighted the excessive simplification in the *food mile* approach,

leading to a revision of the indicator itself with the proposal of *enhanced food miles* (Van Passel, 2013)(ii). In this definition, the quantification of CO₂ deriving from transportation, takes into account, in addition to the distance travelled, also other factors such as the means of transportation used and its energy consumption, the load ratio, the packaging, the waste products, the economic costs, and other pollutants. This version of the indicator moves closer to the sort of analysis proposed by the *carbon footprint* (see p. 25).

The two-dimensional space of areal continuity. An interesting line of research has focused its attention on the concept of *foodshed* (literally food basin) to identify the geographical area from which the foods marketed and consumed in a particular context come from, tendentially identified with the city. This concept was coined by Hedden in 1929 in a book significantly entitled *How great cities are fed*, proposing an approach that had strong assonance with the previous Von Thunen model (1826) of urban food procurement in concentric rings and with the subsequent analysis by Christaller based on the services offered by the city and the consequent hierarchical organisation of space (1933).

In recent years the concept of *foodshed* has been re-proposed (Zasada *et al.*, 2017) echoing in spatial terms, the analogy of a water basin as a continuous area, marked by homogeneous natural elements and applying it to the food supply system. The perspective of the *foodshed* can be interpreted as a generalisation of the single dimension representation of the food spaces described in the previous section: now, the interpretation used to analyse the food chains is no longer the only one-dimensional parameter of distance, but it acquires the value of a two-dimensional topographical space, a continuous and homogeneous surface.

Some of the most recent analyses (Sali *et al.*, 2014) have extended the concept, including those elements of a cultural and social nature that, within a given context, coexist with the environmental matrix and concur to determine the local food system, typical of a particular place. The *foodshed* approach thus takes on the function of a concept metaphor to represent the indissolubility of the bond between the natural and the social ecosystem (Kloppenborg, Hendrickson, and Stevenson, 1996). These proposals draw the interpretation of the *foodshed* closer to the bio-region, analysed on p. 25.

Finally, other scholars have proposed a redefinition of *foodshed* as set of spaces, not contiguous to each other. Among them we mention the studies of Getz (1991) that analyse relationships that are extremely fragmented and diversified among regions, in a reticular geography of temporal steps from one node to another of the supply chain.

The topological space of the flows of matter and energy. The term *metabolism*, borrowed from the medical and ecology sciences, is used herein to describe the set of processes by which a socio-economic system uses up environmental resources for the maintenance of the system itself, among which: the use of biotic and abiotic resources (agriculture, livestock, hunting, fishing, extractive activities); the handling, the production and processing of these materials; the consumption of final products; the expulsion of food wastes and their reintroduction into the natural cycles. This is a description of the relationships between society and the environment, in terms of stocks and flows of matter and energy.

Returning to the classification by Newell and Cousins (2015) and applying it to the works that have used the concept of metabolism in relation to food, one observes the predomi-

nance of studies of industrial ecology (Fischer-Kowalski, 1998; Fischer-Kowalski and Huttler, 1998), which aim at the quantification of the flow of matter and energy between the city and the outside, with the use of different systems of environmental accounting (Material and Energy Flow Analysis; Human Appropriation of Net Primary Production; Ecological, Carbon and Water Footprint, etc.) (Bagliani and Dansero, 2005). Within industrial ecology, studies can be further divided into two main groups. Many analyses are centred on food, seen as one of the various flows that characterise urban metabolism, in parallel to those of drinking water, waste and energy, which examines the origin, logistics, interactions with other aspects (energy, water, emissions) for descriptive and, especially, regulatory purposes, inspired by a principle of circular metabolism ⁽²⁾.

Other studies, through the *life cycle analysis* combined with methodologies of environmental accounting, aim at the quantification of different metabolic flows, that are located upstream and downstream from food and are in relation to the various phases of its production and consumption. These flows concern, for example, the calculation of the *carbon footprint* (which counts all CO₂ emissions related to various activities linked to the production of food, such as, for example, transportation), or the *ecological footprint* (which accounts for all areas of land used to produce a foodstuff), or the consumption of direct and indirect water, matter, energy etc. The final objective is the quantitative reconstruction of the different environmental pressures generated by the whole food supply chain.

With these interpretations, the analyses of the metabolic flows linked to the production and consumption of foods, propose a description of the spaces of the food not in terms of topographical spaces but of topological spaces. The proposed representations indeed refer to a space of flows that connects places that are very distant from each other. For example, the *ecological footprint indicator*, measured in average hectares, takes into consideration the surfaces of the land of origin of different foods that reach the final consumer: these are areas that are non-contiguous to each other, distributed over the entire globe, and that share a functional-topological link with the final consumer (as land of origin of the different productive sectors, centred around the consumer).

It must be pointed out that the metabolism interpretation is exclusively centred on a technical and quantitative description that does not take into account different aspects that relate to the relational, cultural, social and territorial dimensions.

The relational spaces of food. The bioregion. Starting from the Seventies the reflection based on the concept of bioregion starts developing (Berg and Dasmann, 1977), and is understood as a territorial scope that is uniform, from the cultural and ecological point of view. Unlike the *foodshed*, whose area is determined as a function of the inhabitants that it must nourish, the bioregion is represented by its biophysical borders. The bioregionalist proposal takes into consideration not only the topographic physical space, but above all the relational one: the cultural aspect, which resumes localist reflections linked to tradition, is in fact rather important. In this perspective, the insights on the local closing of

(2) Seven offices of spatial planning in Rotterdam have decided to form a working group on urban metabolism called *the Metabolists*. At the basis of their planning activities there is the multi-disciplinary analysis of the processes and systems that characterize their city. Their work focuses on flows, on the local closing of cycles, on organic urban planning, on the circular economy, and on resilient development. Their projects have shown new approaches and innovative solutions for the local production of food in urban areas (De Vries, 2014).

the food supply chains and, more in general, of the cycles of matter, are not merely limited to a purely metabolic-quantitative vision, but they touch the territorial, social and cultural aspects, by proposing a regulatory guidance, explicitly designed to indicate the best solution to be followed.

In the years following its birth, the bioregionalist approach became very popular as a cultural movement with strong social, environmental and political distinguishing features. Today this vision, attentive to relations between nature, culture, economy, places and communities (Feenstra, 2002) and to the dynamics present between flows of matter, energy and knowledge (Iacoponi, 2004) is revived in the light of the role played by the urban region as contemporary form of settlement. In Italy, within the territorialist reflection, Magnaghi (2010) deepened the theme of *urban bioregion*, in which the organisation of the city, and therefore also the food dimension, is defined starting from the conditions of the environment, including the regional agricultural system (Francis *et al.*, 2003; Fanfani, 2016).

This type of approach has favoured the overcoming of an urban-centric vision, in favour of a perspective that is not hierarchical and polycentric, and which aims at promoting forms of endogenous development capable of connecting a plurality of urban and rural centres (Magnaghi, 2012; Poli, 2017).

The specificity of the contexts and of the territorial elements identified by the bioregionalist reflection (natural resources, institutional resources, knowledge, relationships between places) has exposed the need for political-operational interventions that are adaptable to places according to a *place-based* approach (Marsden, 2012). In recent years, there have been several more or less explicit proposals of regulatory ideal configurations of local food systems, which were then used as templates and tools for planning within the regional geographic space. We describe a few of them here below.

SYAL, SAL and SAT. The concept of SYAL (from the French designation of *Systemes Agroalimentaires Localisées*) was proposed for the first time by CIRAD (Centre de coopération internationale en recherche agronomique pour le Développement) in the mid-nineties, to then be since repeatedly redefined up to date (Muchnik, 2010). The territorial dimension of the food system is incorporated within the SYAL, but this space can assume various configurations, so much so that Requier-Desjardins (2007, p. 11) says that the «spatial limits of SYAL may be quite wide, embracing sometimes an entire region, or a set of micro-basins in a region, a kind of archipelago». The territorial-local and relational dimensions are central in this reflection which stresses the aspects of fluidity and continuous transformation (Boucher, 2007). The SYAL is in fact as a collective process of innovation, a privileged area for the construction of new relations between players who share interests and objectives with respect to certain aspects of the food system and who decide how to coordinate themselves.

Starting off as an initial conceptualisation model of the food system, over time, the SYAL has gradually been used as a planning tool for its development: by placing itself in natural continuity with the industrial district model, it became a body of theoretical reference for the establishment of localised initiatives in a geographical area of regional dimensions. Among these initiatives, we can recall the SAL (local agri-food systems) (Porro *et al.*, 2014) and the SAT (*Système Alimentaire Territorialisé*) (Rastoin, 2015). Among the forms present within the regional policies of Italy, it appears particularly interesting to highlight the tendency towards a districtualisation of the agricultural production with its empirical acknowledge-

ment, and the institutionalisation of rural districts, of the agro-food quality districts and of the biological districts. By adopting a local development approach, these instruments are designed to ensure the maximisation of the local integration of the supply chains, in opposition to globalisation's long supply chains of the agri-food system (Bencardino and Prezioso, 2007) ⁽³⁾.

These are approaches that have in common concepts and operational proposals: starting from a given place and in a context of geographical proximity (ideally included within the urban and regional scale), they suggest a strong integration between the areas of production, processing, distribution and consumption (Dunn et al., 2010), trying to locally retain and share the added value (Porter and Kramer, 2011), thus contributing to the development of the agriculture and of the rural territory on which they operate.

The City Region Food Systems. In continuity with the approaches presented in this section, the approach of the *City Region Food Systems* (CRFS) has been proposed more recently. Presented by FAO in 2014 during the World Urban Forum of Medellin in Colombia, the CRFS «encompass the complex network of actors, processes and relationships to do with food production, processing, marketing, and consumption that exist in a given geographical region that includes a more or less concentrated urban centre and its surrounding peri-urban and rural hinterland; a regional landscape across which flows of people, goods and ecosystem services are managed» (FAO, 2017). As stated by Blay-Palmer, Renting and Dubbeling (2015) the CRFS «has emerged at the nexus of both practice and theory. In this way it is evolving with input from both people on the ground working in community food initiatives as well as with input from policy-makers, regulators and academic researchers».

The concept therefore takes as a reference a geographical region, whose centre of gravity is represented by a city with its peri-urban and rural area, and whose boundaries are variables, defined by the presence of functional interconnections between the city and its hinterland. Within this framework, the reflection focuses on flows of people, goods, resources and ecosystem services that revolve around the theme of food in a typical vision of the life cycle, *from farm to fork*.

The approach of the *City Regions Food Systems* has gradually become the compulsory reference in the recent debate on *urban food policy*, to bind sustainable food systems and urbanisation.

This is a richer interpretation compared to metabolism, because next to the physical description of the flow of matter and energy, it combines the consideration of the relational dimension with a particular attention to aspects of governance. We are in the presence of a multidimensional approach (social, economic, environmental, nutritional) which aims at the improvement of local sustainability of the food system, starting from the integrated ecological and socio-economic consideration. Its innovative nature with respect to the regionalist perspective in which it fits, lies in its transverse intent and its systemisation of intra and inter-urban food systems, considering the different territorial specificities (Blay-Palmer, Renting, and Dubbeling, 2015). With this perspective, it becomes clear that not all cities are

(3) In addition to these, we can include the Districts of Economic Solidarity (DES), as a form of active relationship with the territory (Saroldi, 2003). The DES use the networks of economic solidarity to create relations and circulate ideas, information, goods and services by coordinating the needs and the tangible and intangible resources of a specific territory toward a shared goal that is considered to be consistent with their vocation.

equivalent and not all have the same opportunities in terms of potential proximity agriculture, of a town and country relationship configuration, of uses and fertility of the land, of food production, of manufacturing practices used and of processing, storage, packaging and distribution activities of the product itself.

The spaces of food between continuity and fragmentation. Globalisation has led, in recent decades, to the fragmentation of the internal continuity of those once uniform spaces of food: today, the places of production and consumption of food tend to be separate and they lie within increasingly complex supply chains, featuring variable geometries. This has led to further representations in which the food system space is no longer interpreted as a simple fixed substrate, which can be conceived in terms of topographical distance and physical proximity, but as a multidimensional space, in which a product and its supply chain are analysed in the light of the relations and the influences that *simultaneously* (Massey, 2004) develop in space and time. These relations help to define the nature of the single points and their relationships (Prisco, 2014).

The food systems space thus takes on characteristics of fragmentation, flexibility and variability, which lead to soften the dichotomous representations of reality. Thanks to the contribution of the *critical food studies*, the boundaries between categories such as alternative/conventional (Sonnino and Marsden, 2006), Local/Global (Brunori *et al.*, 2016) production/consumption, vertical/horizontal (Murdoch, 2000) are attenuated (Castree, 2002) and progressively replaced by different representations, wherein the presence and the interpenetration of different categories are possible. In this case we speak of representations that favour a perspective of continuity (of the *continuum*). The analyses proposed take different shapes and perspectives which have in common the consideration of food, meant as a physical object and at the same time an intangible experience, able to connect people, themes, cultures, disciplines, period of time and spaces. It is interesting to note how, following this interpretation, a concept such as *commodity*, which for a long time was the emblem of the phenomena of de-territorialisation and verticalisation of the production and distribution system, becomes a category of geographical analysis, because of its intrinsic ability to connect and therefore to understand the complexity and the socio-spatial relationality of the food system (Jackson, 2002, 2004).

At the same time, the lateral perspectives spread out (Jackson, 2002): such as those developed within the scope of the studies that adopt the *follow the thing* approach (Cook *et al.*, 2013) that, based on multi-site ethnography, allow food and foodstuffs to bring out their *biography* (Minca and Colombino, 2012; Colombino and Giaccaria, 2013) and the continuity of their relational contents, within the scope of the different trajectories that they can perform.

Spaces of policies, spaces for policies – The food systems: between Autàrchia and Trantòria. As pointed out in the introductory article of this monographic issue, the food system can be defined, in general and abstract terms, as the set of supply chains which comprise all activities linked to the production, processing, distribution, consumption and post consumption of food (Pothukuchi and Kaufman, 1999). This is a functional definition that takes into consideration the causal relationships and the flows of products along the various stages of the value chain of food, which can therefore be represented in terms of a topological space.

Wiskerke (2016), starting from the more general food system, fixes her view on the urban context, to define the *urban system of food*, which refers to the different methods of urban food supply and takes into account the different ways through which the food eaten in the city is grown, processed, distributed and sold. This consequently includes both the food produced industrially at a great distance from the city, and the one grown in the fields near the city centre and, finally, the one cultivated within the city itself, with urban agriculture practices.

To offer a possible development of these concepts, it is useful to systematically cross the topological representations seen previously with a topographic area interpretation of the space that surrounds a city. In this manner, we can ask ourselves how the food system intersects with urban spaces, thus considering all the spaces dedicated to food, in various forms, within the urban context. What emerges is a mix of spaces and activities that, however, do not necessarily form a food system between themselves, because they are productive aspects that may belong to different supply chains.

Consider, for example, the case of a city in which activities belonging to completely separate value chains are located: production from urban vegetable gardens intended for home consumption; export oriented crops; final transformations and exports starting from foreign raw materials; final resale of foreign products destined for local consumption. These food spaces do not form a local (or urban) food system between themselves, because the only element that unites them is spatial proximity. When (some of) these food spaces are connected together within a single production supply chain, which also includes final consumption, we can speak of *local (or urban) food systems* because we are considering those parts of the food supply chain that nourish the city and that are located in the city itself (in the broad sense for example, of city-region). This are supply chains that, in general, also extend outside the urban context. In the case considered, in addition to spatial proximity (topographic proximity), there is a functional connection between these food spaces, i.e. a topological proximity (understood as a causal closeness in the flow space). This crossing of perspectives allows to represent with greater precision the complex interlacing that characterises food spaces.

It is possible to theoretically imagine two extremes, and opposite, limit situations. On the one hand, an urban centre that produces locally all the food that is necessary for its inhabitants. In this city, which, following the inspiration of Calvino⁽⁴⁾, we could call *Autàrchia*, all urban food spaces are functionally linked to one another to form the *local food system*, which thus coincides with the *system of local food* (i.e. the system that produces food from local territories)⁽⁵⁾, since all food produced locally is consumed within the same local urban scope. In this case the topographic and topological proximity coincide.

At the opposite extreme, we can think of a city that is entirely dependent on food supplies coming from outside, i.e. from locations beyond the boundary of the considered urban system (also in this case, meant in the broader sense of city-region). Resuming a similar case,

(4) Reference is made to the novel by I. Calvino, *The Invisible Cities*. It should be noted that in none of the city descriptions the food issue appears.

(5) More generally, we define the system of local food a system consisting of all the productive sectors that, starting from the food locally grown, process and distribute for final consumption, both inside and outside of the local context.

imagined by science fiction writer Asimov ⁽⁶⁾, we might call this city *Trantòria*. Here the local food system consists of the few spaces of food present in the urban area, exclusively dedicated to the distribution and final consumption of food imported from the outside, to which one may add the upstream productive sectors, almost entirely located outside of the urban context. Moreover, in this hypothetical example, the system of local food is non-existent, because nothing is grown locally.

In reality, we find no case corresponding to the two extremes imagined here: there are, instead, cities featuring intermediate combinations. In general, it is difficult to draw net (spatial and functional) borders for the local system of food. However the representations in topographical and topological terms can be usefully crossed to give life to more systematic and coherent interpretations of the different *architectures* and different aspects that can characterise the local systems of food amongst the various cities: availability of agricultural areas; logistic infrastructure; accessibility to conventional and alternative distribution networks; agri-food specialisation and diversification; choices adopted by collective catering; processes of peri-urbanisation that can increase the consumption local food ⁽⁷⁾; a concentration of low-income people in the urban suburbs that increases the dependence on great distribution and hence on global supply chains, a new culture of food («km zero», typicality, food safety, environmentalism, etc.) which operates in the opposite direction etc.

Spaces and policies. Up to now, we have reflected on the relationship between spaces and food especially in analytical-positive terms, to study and to represent how the food system is made and organised. We now have to question ourselves with a different perspective, of a political-design-regulatory nature, that is more concerned in directing the system toward particular objectives (e.g. environmental sustainability, fairness, accessibility, healthiness, economy).

In the light of the political-regulatory needs of *Urban Food Policy* (UFP), the interpretation of the different approaches proposed in the previous section can be helpful. These are views that are not equivalent to the spaces of food that, considered in their complementarity, contribute to create a more thorough and realistic representation of the links within a system, such as the food one, that is so complex and diversified geographically. Essentially, it emerges how, transversely to the various interpretations shown, a greater orientation toward the UFP changes the perception of the food spaces and the specific knowledge that derives from them, in favour of the identification and proposal of spaces *of food policy* and *for food policies* in the urban policy agenda.

On the one hand, the political-project purpose involves a reconsideration of the food spaces as a function of the definition of the *policy spaces*, i.e. the identification of the more typical areas of action: it is in fact necessary to reflect on what areas one can/should operate on; which borders could/should characterise the design proposals for change. The political players, when planning and acting, define, in a more or less explicit way, a signature space for food policies, functional to the administrative setting, to the institutional structuring, on the borderline of their own responsibilities, but also functional to the interpretations used

(6) In his novels, I. Asimov imagines that the capital of a futuristic galactic kingdom is Trantor, a city which covers an entire planet and that depends entirely on the import of foodstuffs from twenty external agricultural worlds.

(7) We are grateful to Giuseppe Dematteis for these highlights.

to read the local food system and to illustrate the characteristics on which there should political action, which may be more or less inclined to reorient consumption toward the local food system.

On the other hand, the recent proposal for actions and policies explicitly centred on food (Calori and Magarini, 2015) represents a novelty: we must therefore build those *spaces for policies* that are still needed. These are spaces of negotiation and decision, meant both in the physical sense (offices, food departments, etc.) but also in the more metaphorical sense (tables of consultations, *Food Councils* and food agendas, debate spaces, cultural spaces, etc.).

The willingness for a change of register is highlighted in the spaces *of* and *for* food policies: from a sectoral approach to a more integrated and systemic vision which is able to cope with the high level of hybridisation that characterises urban food systems, today, that can be contemporaneously moulded both by the conditions of the local system/regional production, and by the dynamics that follow a global logic (Steel, 2008).

Within this reflection, the theme of the boundaries of the spaces *of* and *for* food policies becomes dominant and forces us to gather further insight on the definition of the «local» scale – the scope of the practice of policies to regulate the local food system – to question the different ways of understanding it, between the political-administrative scale of competence; scale meant as the amplitude of a phenomenon and scale as the product of a social action. This comparison is first of all necessary to avoid incurring into the risks of the so-called *local trap*, i.e. to assume a priori that «eating local food is more ecologically sustainable and socially just» (Born and Purcell, 2006). As stated by the authors, we must indeed be well aware that it is not so much about the scale in itself, rather about the strategies of the players who, at that scale, act to make food more or less sustainable and fair. The reflection on the scale is in any case a compulsory step, especially when the policy is implemented, depending on how much the promoter is a subject anchored to the established territorial boundaries. Suffice it to think of the already mentioned problem of providing an operational definition of the concept of «km zero» or short supply chain in the specifications of the school canteens.

The definition of the areas of action: toward a territorial food system. Reflection on the local policies of food requires thinking at an active level of the local in regulating (within certain limits) food system, or more precisely, at least that part of food system that falls within the local scope (both in terms of localisation, and in terms of potential action by the players who act locally). This local regulation of the food system depends on the capabilities of the local and non-local players (PA, market, organised civil society, individual consumers, etc.) to interact between themselves, to identify and share common objectives within their specific areas of regulation and, last but not least, to put these objectives in relation to the tangible and intangible characteristics established in that local territory.

It is then a matter of discussing, more in depth, about the players, their interaction skills, their self-organisation and planning, and about the issue of recognising the local assets as sources for development. In this perspective, it might be useful to reconsider the interpretations seen above, which, though in ways that are different from one another, deepen these issues, given the theoretical reflections on Local Territorial Systems (LoTS, in Italian SLoT from Sistemi Locali Territoriali), proposed by Dematteis and variously enriched and applied

to real cases by the school of Turin (Dematteis, 2001; Dematteis and Governa, 2005; Dematteis, 2008; Bagliani and Dansero, 2005; Governa, 2014).

As Dematteis recalls, «the LoTS model [...] is useful [...] to explore and describe the geography of the particular resource that is the local ability to self-organise, as it is the interface required to activate, and to a certain extent to also produce specific resources in the development processes» (Dematteis and Governa, 2005 p. 31). The reflection on the LoTS has allowed us to develop an analytical vision and a design approach based especially on the concepts of *local* and *territorial*: the first is understood as an intermediate level of regulation and self-organisation, between the individual (and groups of individual, such as the Fair-Trade Purchasing Groups or others) and the great supra-local dynamics, from regional policies to the global dynamics of the economy; while the second is seen in reference to a territory and its milieu, meant as the set of materials and non-material elements that become resources at the moment in which they are recognized as such, while new elements and resources are produced in the interaction of the players.

Given the reflection on the LoTSs, the possible local regulation of a part of the food system, deriving from the interaction between the players and the elements of the territory that are identified as resources, can therefore be interpreted as a food local territorial system (*Food Local Territorial System, FoodLoTS*).

The LoTS approach is aimed at the recognition, both theoretical and factual, of a level locally active in development processes (Dematteis, 1991), by examining the specific ways in which the local level and the supra-local levels interact between themselves in the territorial changes (Turkish, 1988; Dematteis 1991; Conti and Giaccaria, 2001), as is the case in food systems. The model treats each place as a potential dynamic system of inter-subjective relations, able to establish specific relational, cognitive and organisational resources. Hence this is an approach aiming to a geography for local development (which does not in any case deny the importance of reflections, dynamics and policies at a supra-local level), capable of identifying the value of the interaction between subjects, resources and potentials of the local territory and the dynamics of development. This interaction is studied by searching for the presence of a series of clues and preconditions which favour – suitably supported by interventions of governance – the construction of a Food Local Territorial System to give impetus to its own development path (Dematteis, 2003), with the construction of instruments and ad hoc policies (from *the Food Councils*, to the policies on the green and the urban agriculture, to requests for *local-ness* in their collective catering tender specifications). The starting point to identify a FoodLoTS is hence represented by the research of mechanisms that reflect an active role of territorial entities, gathering as evidence the presence of territorial aggregations of public and private subjects that have produced projects and operations of transformation and territorial development in the various sectors that come across the food theme. It is a matter of drawing a first geography of the territorial action on the basis of the presence and the geometries designed by local design mechanisms, as an indicator of local self-organisation (Dematteis, 2003).

Overall, what this approach aims to highlight is how local development that originates from food is a territorial phenomenon, not a sectoral one, because it derives from the acknowledgement that the various components of the food system are linked to each other in a space, and that transversality and integration are originating sources of new development. So it is not simply a procedure, that is automatically reproducible and exportable into other

contexts, nor a mechanism which can occur anywhere and under any condition, but a process which, based on the interest being created around the UFP (seen as a sparking factor), may find fertile ground for the establishment and the mobilisation of a local network of players (local and non-local) that *looks* at the food system in its territorial dimension, that find the potentials and limitations, and that defines a development path, starting from the objectives, the priorities, and the sometimes conflicting, but actually present, interests. The local network of players also potentially includes both those involved in the local food system (e.g. producers, Purchasing groups, urban vegetable gardens), and players in the local food system aiming to export outside of the local context, which have an important role in economic growth (e.g. Lavazza in Turin or Ferrero in Alba) and that can see the benefits of getting involved in a local collective action.

Conclusions. – After exploring the spaces of food and after highlighting that the spatial perspective is a privileged interpretation to analyse the food phenomenon its various meanings, the reflection has moved onto a design plan, to gain further insight on the spaces of and for food policies. The last section, dedicated to the examination of the areas of action, proposed the concept of food local territorial system as a theoretical-methodological model, as a reference for urban food policies and inspired by studies on Local Territorial Systems that are compared, more in depth, with the theme of the players, their capability of interaction, self-organisation and design, and with the issue of the recognition of the local assets as levers for development.

Within a context of increasing design and planning around food, whence the different and interactive purposes do not necessarily contribute to the creation of an integrated and coherent system, the preliminary knowledge of the local system and the verification of the presence of clues, such as networks of players, and the presence of active resources that can be activated by interventions, becomes a particularly useful condition for the success of projects, actions and food policies.

Notwithstanding its connection to the literature that has variously interpreted food spaces, converging toward a roughly defined prospect of City Region Food Systems, we find rather fruitful the interpretation of FoodLoTS as an analytical representation of the local territorial food system as a network of layers capable of setting in motion locally specific mobilisation processes not only of resources as an acknowledged given (fertility of soils, productive specialisations, image and reputation of a city linked to quality food and wine), but also of those energies and design potentials found in different territorial contexts that can be activated and lead to a (at least partial) local regulation of the local food system.

The prospect of urban or local food policies requires the understanding of what the chances of local regulation are, within given limits of autonomy, which in a territorial context can be put in place by the actions of localised players. The greater and the wider the framework of the players involved in the construction of local food policies, the greater the chance of local regulation. In case only the Municipality is involved, with all or part of its departments, it will be possible to construct local food policies that configure a local food system (not only of local food) that are -definitely smaller in scope and potential compared to a context in which the framework of the players is wide and articulated and includes, in addition to local authorities, even other public entities such as Chambers of Commerce, Universities, food movements, and even private companies of the agri-food sector not ne-

cessarily aiming at the local market etc. Furthermore, the wider the territory of reference is, albeit within a relational context where proximity is fundamental, the larger the ability to mobilise a broader framework of players and steps of a potential local food system. This also varies from case to case, thus comparing the scales of political-administrative competences and the reference scales of the urban system.

In this manner, different perspectives cross over each other: at the analytical level, by considering the presence and organisation of the local food system and food local system; at the institutional level, considering the current and potential skills (meaning that the voluntary nature implies that there are actions and skills that are not provided for, but not even excluded by law) of Municipalities, Metropolitan Cities and Provinces, Unions of Municipalities, up to the regional-institutional level; at the political level, considering the food region, i.e. the local territorial food system, as the outcome of voluntary policies of a large number of players with a *place making* perspective toward a food system that is more sustainable, fair and resilient.

Public Administration, markets and the growing participation of civil society (increasingly organised in associations of producers, consumers, in pacts made between them, in local and transnational food movements) can thus muster further self-consciousness, of the potential and the advantages of the discussion and cooperation at the local scale, and reposition themselves by redefining the local territorial food system in a *governance, that is integrated* since it connects the different components in phases and themes of the food system, from idea conception to post-consumption, and that is *territorial*, since it aims to connect the specificity of each physical local territory, thus redefining its relations and representations.

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TOWARD THE LOCAL TERRITORIAL FOOD SYSTEM: SPACES OF ANALYSIS AND ACTION. – In recent years multiple studies and insights have been published on food systems, which have seen the proposal of a plurality of paradigms for the analysis and planning of territorial food systems. The objective of this paper is to perform a reconnaissance and systematisation of different theoretical and operational approaches that encode the relationship between space and food system and that are, or could be, used for an urban or local food policy. To this end, starting from a more general and abstract idea on the spaces of food, in their general and metaphoric valences, we discuss in depth the main approaches to the spatial processing of the food system found in literature and in the experiences of *urban food planning*, thus considering their developments and reciprocal hybridisations. Finally, a theoretical and operational definition of local territorial food system territorial will be provided, as an assumption and at the same time as the outcome of the reasoning and action for an integrated project and a local food policy.

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