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## Article

# Towards Sustainable and Sufficient City Region Food Systems: Reflections from the Case Study of Turin, Italy

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**Abstract:** The City Region Food System (CRFS) approach has emerged in recent years as a framework for shaping urban food governance and policies that overcome the methodological cityism of approaches limited to urban territories defined by administrative boundaries. This article critically analyses the concept referring to the case study of the metropolitan city of Turin, Italy, as part of action research contributing to ongoing efforts to establish food policies. The discussion focuses on three dimensions: (1) the spatial definition of the city region; (2) the relation between the support of short and the re-assessment of long supply chains, with reference to a relational understanding of space; (3) the tensions between the CRFS as an analytical concept and a transformative framework. Results suggest that there is no linear path to define the spatial limits for a CRFS analysis and that a pragmatic approach can best serve policies; that long supply chains should not be ignored but integrated into local food policies; that there are contradictions in the transformative dimension of the CRFS literature when investigating the underlying sustainable development framework from a growth-critical perspective; and that separating the analytical more clearly from the normative dimension could make the discussion more productive.

**Keywords:** city region food systems; relational spaces; metropolitan areas; urban food policies; post-growth



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## 1. Introduction

This paper is set in the context of growing attention to the construction of urban food policies as an area of convergence between experiences and processes in the global North and South [1–5]. As far as the North is concerned, the points of reference are the pioneering experiences and related debate of North American and Northern European cities that have been initiating urban food policy processes for a number of years, starting from issues such as the fight against obesity and so-called “food deserts”, and the engagement of cities in actions against climate change and in favour of social and food justice [2,6–9]. This urban food planning movement has intersected with similar experiences in cities of the global South, starting with the issue of city provisioning and food security, which has long been an object of debate and policies [10], including in the context of the FAO’s “Food for the Cities” programme, launched as early as 1990 and recently relaunched, and the initiatives of associations such as RUAF or ICLEI and other international research centres [11,12].

The geography of urban food policies sees an increasing number of cities and their territories involved in processes and projects. This is well testified by the large number of adhesions to the Milan Urban Food Policy Pact (MUFPP), launched during EXPO 2015 in Milan: as of July 2024, 280 cities were members, including almost 30 in Italy, with other cities and territories also active beyond MUFPP membership [13].

Urban food policies, in the form of an integrated and systemic approach aimed at linking consolidated actions and promoting new ones, are a new field of research and political action. Geographers, in both the Anglo-Saxon and French-speaking worlds, are playing a crucial role in this debate, which, as a new field, is, as such, not the prerogative of one discipline to the detriment of others [6]. The need for a convergence of a plurality of disciplines, approaches, and fields of study, interweaving urban, rural, and food studies, seems clear. This new field of reflection expresses a strong demand for knowledge and, above all, geography because it requires a different gaze at the city, focusing on its relationality: its relations with food and food systems, city–country relations, and the intertwining of vertical and horizontal relations and between long and short networks in the functioning of food systems. This is also why, in the Italian debate, there is a preference to speak of local rather than urban food policies [14].

In this need for geographical knowledge, one of the most relevant questions is which might be the best territorial reference to develop and apply urban and local food policies [14]. At what scales and by which territorial administrations should they be applied, taking into account the need to combine territorial and reticular logics, both in the analysis and management of territories and food systems? Limiting urban/local food policies to municipal administrative boundaries would be problematic in an era in which urban boundaries are considered to be increasingly blurry. At the same time, though, one of the policy challenges is to explore and strengthen awareness about what the municipal scale can do, in the sense of a “local responsibility for the global” [15], to reorient food systems towards horizons of greater sustainability and justice.

In this context, around a decade ago, the Food and Agriculture Organization (FAO), together with the RUAF Foundation, made an important contribution, introducing the concept of the City Region Food System (CRFS) [16]. The literature highlights that the appropriate territorial scale for local food policies transcends municipal boundaries. As a consequence, the CRFS has been developed from the concept of city region [17], which refers to both larger urban areas—be it big and megacities or clusters of smaller and medium-sized towns—together with and in connection to their surrounding rural and agricultural areas. Based on this concept of the city region, FAO defines the CRFS as “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 center and its surrounding peri-urban and rural hinterland; a regional landscape across which flows of people, goods and ecosystem services are managed” [5,17].

In spatial terms, the definition combines a relational and territorial perspective, referring to a geographical area comprising urban, peri-urban, and rural spaces, with variable boundaries defined by functional interconnections between the city and its contiguous hinterland. In other words, the development of a “city region-based” perspective on food systems implies an understanding of cities as being more than isolated entities and rather as being intricately linked with their surrounding peri-urban and rural regions. Thinking through this broader scale opens substantial possibilities for strategic planning.

In May 2023, we searched for publications with the keyword “City Region Food System” on the Web of Science and Scopus databases, finding a total of 57 journal articles and book chapters discussing the CRFS. We have read the abstracts and a selection of complete papers. Considering the abstracts, while many of these publications employ the CRFS as a secondary reference while discussing other, more specific, issues, such as alternative food networks or food security, only a minority of papers attempt to make the CRFS an object of research as such. Many papers discuss, for instance, the effects of the COVID-19 pandemic on food systems, considering this historical moment both as a reason to reinforce the resilience and sustainability of food systems and as an occasion to do so, with the CRFS as a framework able to support this goal. In general, there are frequent references in the abstracts to the goal of increasing the sustainability of food systems in the literature, usually in relation to the sustainable development goals. A main strategy

discussed in this context is the reinforcement of short food supply chains and urban–rural linkages, also through alternative food networks. There are some publications oriented at a perspective in which attentive governance is supposed to be able to easily overcome the contradictions, which are pointed out, and another group of papers referring to the CRFS in the context of a call for a radical transformation of the current globalised agro-industrial food system.

Crucially, indeed, the CRFS is not only a framework for analysis but also for the development of policies. According to Blay-Palmer et al. [5], the CRFS is “both a conceptual framework and an integrative operational approach” (p. 2). As an operational approach, CRFS seeks to increase access to food, generate decent jobs and income, increase the region’s resilience, foster rural–urban linkages, promote ecosystem and natural resources management, and support participatory governance.

Meaning to provide a comprehensive understanding of CRFS, the intersection of definitions developed by the reviewed works suggests that it is thus a multidimensional approach (environmental, economic, social, and nutritional, other than a potential framework of governance) aimed at improving the sustainability of local food systems. CRFS distinguishes itself due to its fundamental feature of interdisciplinarity and its systematic approach to dealing with both intra- and inter-urban food systems, crossing and integrating various fields and disciplines to comprehensively address the complexities of urban food systems [18]. Nonetheless, although CRFS’s potentials rely on the approach’s interdisciplinarity, it is relevant to underline that the CRFS’s conceptual innovation hinges on the crucial feature of implementing a territorial approach to govern urban food systems, considering the intricate urban–rural connections between multiple facets of food systems. There is thus a strong emphasis on territorial interconnectedness, encompassing not only the direct food-related links between the urban and rural areas of a city region but also the flows of nutrients, water, and energy, contributing to an increasing awareness of how food systems are deeply embedded in their territories. Moreover, the CRFS approach pays particular attention to governance aspects and the territorial specificities of a given city region, avoiding one-size-fits-all solutions. According to Sonnino [19], “the notion of “city-region food system” has emerged as a prism to explore and address the territorial dimension of uneven power dynamics, which have historically reduced rural areas to extractive sites of resources (including food) for ever-growing urban populations” (p. 3). It is thus a framework that aims to overcome the “methodological cityism” [20] that has long characterised not only the debate of urban sustainability in general but also that on urban food systems and the policies for their transformation [19].

In this article, we aim to explore, in particular, the following three issues in order to deepen the conceptualisation of the CRFS. To begin with, we contend that there is a double spatial question in this perspective, which must first be disaggregated before it can be reassembled. First, there is the question of the adequate spatial definition of the city region itself, which is a precondition for the CRFS approach to be able to effectively address and overcome the extractive use of rural areas by cities in order to allow an effective involvement of rural areas in the city region in a perspective of governance and transformation. We will discuss the challenges of this task in Section 2.

But then, secondly, we cannot ignore in the context of a growing awareness of spatial relationality [15] in general and the processes of planetary urbanization, specifically [21–23] that the food systems in which a city region is involved do not simply stop at its borders—even when they are much wider than those of a single municipal administration. Thus, in Section 3, we discuss the need to tackle more explicitly the relation between short and long supply chains between rather localised or regionalised and globalised food systems.

Third and finally, there is an ambiguity in the debate about the CRFS in how far it should be understood as an analytical or, rather, a transformative framework. In Section 4, we suggest that this creates risks of confusion in both research and policy agendas and that a clearer distinction between the two dimensions could be helpful. Furthermore, empirical

evidence collected, for instance, Sonnino [19] hints at contradictions between different goals of CRFS's underlying sustainability agenda. We argue that this could be related to underlying contradictions in the sustainable development framework itself [24,25], which could be fruitfully addressed by developing a de- or post-growth perspective on food system transformation [26–28].

We substantiate these arguments by references to ongoing action research in the metropolitan area of Turin in north-western Italy. Turin, Italy's fourth-largest urban area in terms of population, is a relevant case in this context due to the city's holistic approach to food system management. In particular, thanks to the EU Horizon project FUSILLI, a long-term food system vision has been constructed, including a plan that tackles both pressing needs and long-term sustainability goals. Through FUSILLI, Turin has begun developing an urban food policy, driving conversations and practices towards innovative, sustainable solutions for the local food system [29].

Furthermore, in the framework of the national research project Agritech, funded by the National Recovery and Resilience Plan (PNRR), of which this article establishes parts of the theoretical framework, we are trying to widen the perspective of Turin's food policies both geographically and content-wise. This project of action research moves beyond the city level to the metropolitan scale, taking into particular consideration the area's polycentricity; the project's aim is not only to perform research but also to support the actors in the CRFS to define policies towards a more Sustainable and Sufficient CRFS in the metropolitan area of Turin.

## 2. Spatialising CRFS: The Pursuit of a Geographical Definition

After defining CRFS and understanding its potential, it is necessary to establish an inclusive, adaptive, and cross-sectoral policy and planning framework to integrate CRFS into spatial planning. This can facilitate cooperation, coordination, and integration between producers, distributors, and consumers along the urban–rural gradient to build a more equitable and functional relationship between populations, as well as management strategies to support both cultivated land in urban territories and multifunctionality in rural productive landscapes.

Nonetheless, one of the main issues highlighted in the discussion of CRFSs is the challenge of spatial governance. If there is no easy way to define the boundaries of a city region, and if its boundaries are, per definition, set by functions and flows that move across multiple scales, then a city region also transcends administrative boundaries and involves multiple actors in asymmetrical ways [30]. This can make the realisation of governance of a CRFS a difficult endeavour.

One pragmatic response to this issue consists in the acceptance that the definition of a city region will always be imperfect and that it is more important to have a public administrative body in order to effectively enable the use of the framework for food system transformation, even if this administrative body does not perfectly correspond to a functionally-defined city region. Choosing such an approach would be reasonable when the difference between administrative and functional areas is not excessive, leaving fundamental components of the food system out of reach.

Indeed, it is necessary to recall that FAO's definition of the CRFS draws extensively on the theoretical framework of the "city region". As defined by Rodriguez Pose [31], the city region is a "node" that "tend[s] to coincide with relatively large cities or with systems of medium-sized cities in close geographical proximity that articulate the economic and social developments of suburban, peri-urban, and rural hinterlands. This interaction between an urban core and its semi-urban and rural hinterland is the essence of the city region (pp. 1025–1026). Although there is a broad consensus concerning the main features of a city region, a universally accepted definition is missing, resulting in broad interpretations encompassing a spectrum of spatial scales below the national level.

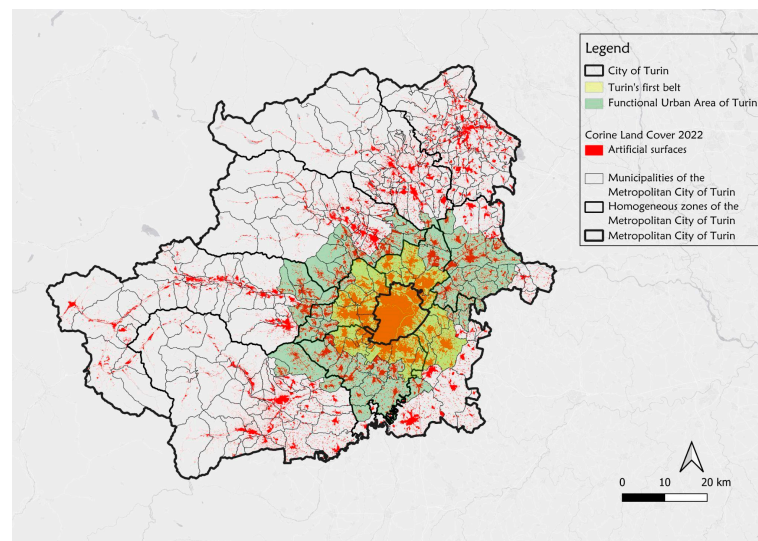
For the purposes of the present reflection, it is relevant to underline that this ambiguity transcends mere semantics; it reveals the fundamental complexities of classifying urban

spaces that exhibit remarkable diversity in their form and function. “City regions” may encompass distinct entities—conurbations, urban agglomerations, or other urban clusters—differentiated by their urban density and economic integration. In other words, the concept of the city region is inherently fluid and needs to be adapted to diverse contexts. In some cases, like Toronto in Canada and Medellin in Colombia, a city region might embody a tightly-knit network of urban and suburban areas characterised by a clear urban core, robust but somewhat asymmetrical economic linkages, and shared infrastructure. In other cases, like Kitwe in Zambia and Utrecht in The Netherlands, the term might describe a diffuse system of smaller urbanised areas without a clearly defined core, less integrated economies, and more independent identities.

According to Parr, the term “city region” is applied to a range of spatial configurations that encompass significantly diverse territorial scales, lacking a universally agreed-upon definition. Often, it is employed to highlight the vast size or spatial scope of a metropolitan area [32]. This can be defined by three criteria. Firstly, the criterion of homogeneity emphasises groups of municipalities with shared characteristics such as population size, density, and socioeconomic traits. This approach facilitates a coherent analysis of urban and metropolitan dynamics by identifying settlements with comparable features. Secondly, the criterion of morphology considers the spatial configuration of the territory, including aspects like contiguity and integration within specific geographic or orographic systems. Finally, the criterion of interdependence analyses the intricate functionality that connects municipalities within a metropolitan area. By examining the flows of people, goods, and information, it addresses the networks and mutual dependencies that transcend administrative boundaries. This highlights the dynamic nature of metropolitan areas, where interactions among diverse actors and sectors diverge from immediately knowledgeable features [33,34]. A metropolitan perspective is especially valuable in areas where cities blend into suburban sprawl, which crosses the boundaries of municipal governments. Working together, they can use resources more efficiently, prevent overlapping projects, and make sure that policies support each other for a greater overall impact.

In their review of the literature exploring the capacity of food systems to improve the multifunctionality of urban landscapes, with a focus on social cohesion and quality of life, Säumel et al. [35] highlighted an imbalance of rural–urban relations. Considering the goal of establishing fairer urban–rural relationships, the concept of city region is problematic. CRFS aims to overcome methodological cityism, i.e., the tendency to prioritise strategies, policies, and initiatives enacted by specific cities over and above a more comprehensive and systemic rural–urban perspective [19,36]. Yet, critics have argued that the city region approach has a strong urban-centric bias disregarding any sense of an overarching, interregional rural condition, which establishes and reinforces notions of geographical centrality and hierarchies and marginalising rural concerns within structures of urban domination [37,38]. It is important to pay more attention to constructing a CRFS across different territories, including locally present and prevalent discourses, and relying on the analytical and factual level. It is, therefore, necessary to consider the specific and potential agrifood production of the territories and the presence and strength of local food systems, understood as short networks involving actors from different stages of the supply chains and as the capacity of these actors to work together in a local, territorial food system [39].

In the case of Turin, located in the north-west of Italy, the central city’s municipal boundaries, which extend to a radius of approx. 15 km, are too small to include all components of a food system, lacking, in particular, relevant spaces of food production. Rather, Turin’s city region can be defined as expanding its borders in different ways (Figure 1). At first, as visible in Figure 1, it can be considered the functional urban area, which extends ca. 20 km from the city centre [40].

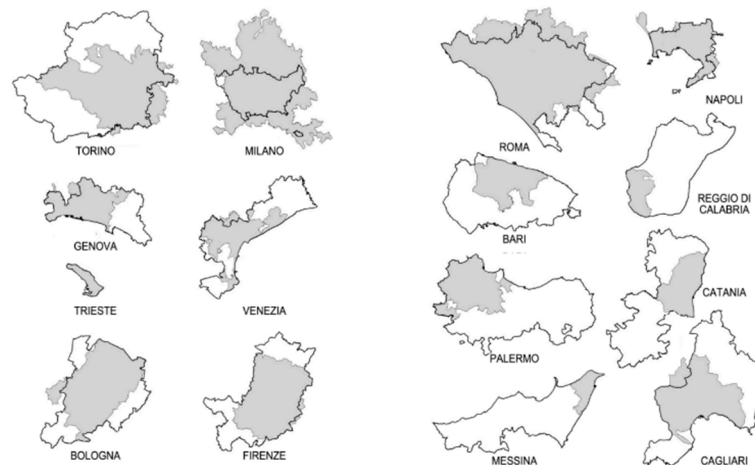


**Figure 1.** The Metropolitan City of Turin. Source: authors' elaboration.

A further possible spatial definition of Turin's city region corresponds to the territory administered by the Metropolitan City of Turin, which includes 312 municipalities (Figure 1) [41]. This would be a pragmatic definition, as proposed at the beginning of this section, a definition we have chosen to adopt in our research. The territory of the Metropolitan City of Turin comprises an immense diversity, from high mountain landscapes to hills and plains, from rarely roamed valleys and peaks to dense urban cores, and from small alpine pastures to intensive industrial agriculture in the plains, but it is governed by one administrative body. The territory of the Metropolitan City of Turin—like that of the other Italian Metropolitan Cities—has not been the outcome of a specific process of defining the boundaries of a functional territory of the city region; instead, it has been the result of transforming the pre-existing Province of Turin into the Metropolitan City [41]. This is, without a doubt, a major limitation in relation to the definition of a city region as a functional unit. Indeed, as visible in Figures 1 and 2, the functional urban area of Turin does not match the boundaries of the Metropolitan City. Comparing Turin to other Italian metropolitan cities, it is evident that the territories of the metropolitan cities of Florence, Rome, or Bologna, for instance, correspond to a larger degree to their respective functional areas (see Figure 2); a closer alignment between administrative boundaries and their functional urban areas allows for more cohesive reflections on the food system governance of these cities, which face similar challenges.

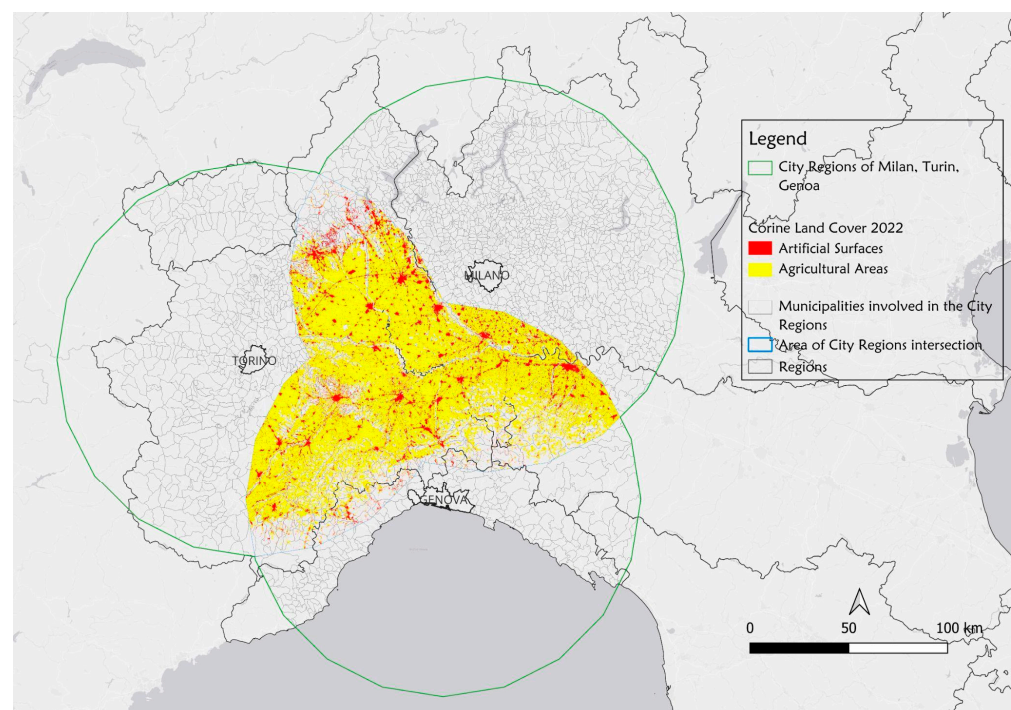
All the same, in relation to the area's food system, according to previous research [40], the functional urban area of Turin has a food self-sufficiency rate of 92%. While it is important to take into account that this calculation is based on a series of approximations (e.g., considering a homogeneous productive potential for all areas across the territory), this number, even if potentially somewhat overestimated, suggests that the area's agriculture is a relevant means of sustenance for the functional urban area. Even if this urban functional area does not perfectly match the boundaries of the Metropolitan City, only a small portion of it remains outside, while another portion of prevalently agricultural territory is included. In the meantime, the Metropolitan City, as an administrative body with competencies in spatial planning, has the potential to effectively enact a transformation of this food system, combining territorial resources and facilitating a process of working towards shared goals. Furthermore, the territory of the Metropolitan City of Turin is characterised by a marked polycentricity, which the ongoing research project attempts to reflect by not working only in the main central city, Turin, but also in a series of minor cities—which constitute relevant centres for their respective territories—such as Chieri, Ivrea, Settimo Torinese, the Susa Valley, and Pinerolo. Even though these towns present marked specific local identities, with stakeholders in our workshops often feeling their towns to

be at the centre of the surrounding territories (which lack formal definitions), it would be counterproductive to design food policies independently from each other in a highly interconnected Metropolitan territory. Interacting in this process of transforming the CRFS with the kind of administrative body that the Metropolitan City represents allows streamlining of efforts and maximising of resources. Indeed, the Metropolitan City is currently revising its strategic planning, including a broadly defined work on food systems, to which the ongoing action research relates, with the attempt to build tools that support an effective creation of food policies at a Metropolitan scale, respecting its polycentricity.



**Figure 2.** Some metropolitan areas of Italy and their respective functional urban areas. Source: Espon, from [34].

Finally, Turin can be seen as a key node within the broader city region of north-western Italy's historical "industrial triangle", which includes Milan and Genoa, all within a 100 km radius. By integrating their food systems, Turin, Milan, and Genoa could enhance a resilient and cohesive City Region Food System that benefits the entire area (Figure 3).



**Figure 3.** The city region of the Italian industrial triangle. Source: authors' elaboration.

The map (Figure 3) illustrates the city regions of Turin, Genoa, and Milan, each schematically represented by a 100 km radius circle. The overlapping yellow areas mark zones where food production activities are possibly shared between two city regions. While this map is foremost a geometrical exercise without directly relating to concrete food systems, the large area of intersection suggests the presence of a significant degree of interaction between the respective food systems. The visualisation emphasises the interconnected nature of food production and distribution systems within these major city regions, displaying how this previous industrial triangle could possibly remain a relevant territory of interregional cooperation regarding this/these city region(s) food system(s).

After this analysis, it is possible to consider that, for the present purposes, the territory of the metropolitan city is certainly not the only possible spatial definition for Turin's CRFS, but it provides a reasonable starting point (see Table 1). Most importantly, its cohesive administrative structure aligns with the need to improve effective governance. Therefore, choosing the metropolitan unit as the basis for the CRFS framework is not just about convenience; it strategically leverages established governance structures. Schmid [42] highlights the importance that administrative boundaries retain in terms of governance and law, even though the urban as a phenomenon has long transcended these boundaries. This allows the effective addressing of complex food system issues, the fostering of equitable urban–rural relationships, and the laying of the groundwork for successful CRFS implementation across the entire city region.

**Table 1.** Delimiting Turin's city region.

City Region Radius	City Region Definitions	Administrative Levels
7.5 km	Municipal boundary	Municipal
15 km	First belt of Turin	Municipal
20 km	Functional urban area	Metropolitan
50 km	Metropolitan City of Turin	Provincial
100 km	Industrial triangle	Regional

Source: authors' elaboration.

### 3. The CRFS in and beyond Its Geographical Limits: The Debate about (Re-)Localisation and the Relationship between Short and Long Supply Chains

The proposal of the CRFS is closely related to its geographical space. As discussed in Section 2, the concept of the city region is by no means a straightforward one. This is clear when reflecting on its territorial limits, and it further complicates when taking into account the metabolic nature of food systems (i.e., the fact that they are made of relations, such as supply chains, rather than predefined geographical units) and in this context the normative stance for (re)localisation in the CRFS proposal (and not only there). To clarify the complex interplay between these aspects, it is fruitful to engage with the notion of the relationality of space: according to Massey [15], to put it simply, space is made through relations, places are where relations intersect, and these relations evolve constantly, with the human species being mobile as much as rooted. These relations tend to transcend and modify borders, which are imagined as fixed. This further complicates the pursuit of a city region's territorial definition, and it problematises the idea of a well-defined local sphere "back to" which something like a food system might be (re)localised. Limiting the gaze only to what happens inside a CRFS, in other words, would risk reintroducing a methodological cityism (widened to the city region) through the back door.

The debate on planetary urbanisation (PU) [21,22] indeed has highlighted how, over the last decades, urbanization processes have extended in such a way that considering only cities inside their predefined administrative borders, or understanding cities simply as a phenomenon of physical agglomeration, has become a problematic act of "methodological cityism" [20]. Methodological cityism is problematic as the relations external to these boundaries, which are fundamental for the very existence of cities, are obscured. PU instead suggests the importance of understanding urbanisation foremost as a process

that has become planetary: in some way, practically every corner of the planet, also the apparently most rural one, has been “operationalised” [21], according to this perspective. Postcolonial and feminist observers [43,44] of this debate have rightly criticised the totalising tendencies in this interpretation, obscuring, for instance, that there have always been differences, alternatives, and resistances to these processes, which the language of PU risks to obfuscate [45]. Even so, the observation that, even if this does not necessarily regard each and every corner and even if there are important differentiations to make, PU tends to violently subjugate and operationalise large areas of the globe, extending urban hinterlands through complex networks of production, supply, and consumption far beyond those topographically contiguous to cities, is fundamental and backed by a large amount of empirical evidence [23,27,46–48]. This is also and particularly true in the context of globalised agrarian production and consumption and, thus, a fundamental issue for any approach to urban food systems (see, for instance: [23,27]); global agro-industrial food systems indeed can be understood as one of the specific processes through which landscapes are operationalised under planetary urbanisation [49]. Opening the analysis beyond the terminology and methodology of planetary urbanisation, one can add the observation that global food systems have long been an often extractive and exploitative transformative force of global ecologies and societies. Similar discussions have been made, for instance, in relation to studies of commodity frontiers in colonial times [50], de-peasantisation [51], and commodity chains [52]. Finally, this is also the basis of the rationality of advocating for their (re-)localisation in the context of urban food policies in general and the CRFS approach in particular. An idea of spatial relationality and the perspective of PU, though, helps in the understanding of how profoundly cities are immersed in these planetary geographies and that a naive perspective of relocalisation that focuses exclusively on what happens inside a city region risks simply obscuring those relations, which de facto extend far beyond their territories.

The literature on CRFS does recognise this need; what we aim to contribute here is to argue that this aspect is central and that it needs a more explicit discussion both in research and practice.

In a recent review of the CRFS [53], the authors highlight the experiences of European, Canadian, and Australian communities during the COVID-19 pandemic. While reaffirming the necessity of a transformation towards more localised food systems, the authors do not advocate for complete isolationism of food systems; rather, their intention is to underscore the significance of evaluating and empowering local food systems in order to set up proactive systems capable of resisting external stresses. In other words, the study highlighted the importance of reducing external market influence over local food systems' processes, meaning to expand territorial capacity of self-responding to food-related needs. It called for a comprehensive analysis and evaluation of food systems with the ultimate goal of mitigating the risks associated with international supply chain disruptions at the local level [5].

The point, thus, is to understand what this call for a sort of differentiated relocalisation can mean under the premises of planetary urbanisation. Here, it can be useful to turn briefly to the large debate on relocalisation in the literature on the spatialisation of degrowth. Degrowth is a framework that, sceptical of the idea of sustainable development, as the possibility of decoupling economic growth from ecological impact appears to be an illusion [24,25], advocates for an “an equitable downscaling of production and consumption that increases human well-being and enhances ecological conditions at the local and global level” [54]. While for many early degrowth proposals, in the tradition of utopian ecological thought [55], relocalisation has been a fundamental proposal, understood as organising space in largely autonomous communities [56]. By hoping in this way to be able to radically reduce the social metabolism, other contributions have problematised this proposition, reminding of the limits of communities (which do not automatically take globally sustainable decisions) and, fundamentally, arguing that the proposal of structural relocalisation ignores the complexity of existing human geographies and underestimates

the ecological cost of transforming physical space in different forms [57,58]. In another context, Purcell [59] wrote about the “local trap” of attributing predetermined values to certain geographical scales rather than analysing problems in their specific context. Fundamentally, this debate is an invitation to be more precise about what localisation could and should mean in a certain geographical context and a certain field of policy.

Now, food systems can certainly be seen as a field in which the relationality of space is particularly evident. It is one of the areas of social metabolism that needs to be tackled to mitigate the current poly-crisis in general and the climate crisis in particular. According to several studies [60–62], food systems globally are responsible for between a quarter and around forty percent of global greenhouse gas emissions. The same data sets show that most of these emissions are caused by the production phase and land use change, while transport emissions play a minor role and that animal products have far higher emissions than plant products. Thus, to reduce emissions, it seems that the most important step would be dietary changes towards a more plant-based diet, which is already recommended as both healthy and sustainable [63]. But in many geographical contexts, climatic conditions do not allow for a diversified and year-round production of vegetables (because it is too dry, too cold, etc.); this is actually an argument against being too radical about the trade of food. Considering in particular, plant-based food, on the contrary, contrasting food trade, in general, might oblige those areas with little agricultural potential to increase their reliance on the consumption of animal-based food or, in some cases, even prejudicate their food security. Indeed, from a global historical perspective, the increase in food trade has helped to reduce nutrition insufficiency in many places, compensating for insufficient levels of agricultural production in many countries over the decades [64–66]. The same studies hint to the fact that the benefits of this increase in global food trade have been unequally distributed—most problematic of all, their data hint to the fact that a main beneficiary has been high levels of meat consumption in wealthy countries. This may not be surprising, thinking, for instance, of the deforestation in Amazonia for the export of meat production [67], which again is an important source of greenhouse gas emissions beyond the devastating impacts on biodiversity [68]. Animal products also require much larger surfaces to be produced (not all of these, of course, could be adapted to crop production) [69]. Also, non-meat global food chains are not without problematic impacts. In a case like fruit produced in Chile for global export markets, the problematic dimension of this production system is less a question of the climate impacts of transport but of competitive structures in global markets, which contribute to unequal power structures impacting negatively on small producers and precarious workers and favour large scale monocultures with their negative impacts on economic and biodiversity [27]. In this framework, it is also worth mentioning the Sub-Saharan African context, where inappropriate lending by the World Bank left nations indebted and without productive assets to service their debts. Structural Adjustment Policies (SAPs) were then imposed, forcing nations to cut spending on essential sectors such as agriculture, education, housing, and health [70]. This situation allowed private foreign investments to extract resources that were crucial for local communities’ livelihoods. Consequently, SSA countries fell into a vicious cycle of debt and interest payments, depleting cash reserves needed for domestic expenses and limiting the development of efficient and locally appropriate domestic food production and supply chains (*ibidem*). For example, fishing activities have slowly fallen under the control of multinationals’ vessels, particularly in Western Africa, pushing some species towards extinction and damaging the marine ecosystem that supports local fisheries [71]. Within this framework of weakened domestic agricultural capacity and depleted marine resources, unregulated food imports enter African markets. These imports often come from countries with heavily subsidised agriculture, allowing them to be sold at lower prices than locally produced goods. This situation undercuts local farmers, further discouraging investment in domestic food production and increasing dependency on imported food [70].

At the same time, the Chilean case also shows that alternative forms of trade relations do exist; there are cases of fruit produced for export in Chile in which agroecology is

applied in the field, fair trade mechanisms support small producers and workers, and the production for export is part of a diversified local economy actively built by a Mapuche community in Southern Chile—these good practices, though, have two fundamental implications: (1) quantities produced for export are reduced and, (2) only if systemic power structures change, they can become the blueprints for systemic transformation instead of remaining in niches, often dedicated to elite consumption [27].

Turin can be a case for introducing a further consideration; also, on the consumption side, space is relational. Doreen Massey has illustrated in writing about her London neighbourhood [72] that the characteristic identity of being a (very local) place was shaped through the (very global) relations of migration, exchange, and trade that crossed in her neighbourhood. Similarly, in Turin, a market like Porta Palazzo (one of the largest open air markets in Europe) is constantly remade as a social place through the infinite (inter)connections between producers, vendors, products, and consumers who come from both the contiguous and the extended hinterlands of the city; with intricate cases like farmers of Chinese origins who sell their Chinese varieties of vegetables produced just 30–40 km from the city, vendors of Southern Italian or Moroccan origins who sell oranges from Southern Italy (at least 1000 km away), or products which are considered typical for the City of Turin, like chocolate, coffee, or anchovies, which can be there only due to the long supply chains. Anchovies are historically connected to the salt trade from the bordering region with sea access of Liguria to the land-locked Piedmont and have an important place in the local cuisine. Chocolate and coffee are essential parts of the local culinary heritage, but their local transformation and consumption have been made possible by colonial violence and far-reaching transport systems. Without wanting to give an essentialist evaluation of these intricate geographies, they certainly illustrate the complexities of relations between local and global supply chains; human interactions that are implicated in a food system like that of Turin illustrate that cultural values also play an important role in this.

All these considerations finally suggest a differentiated approach to the question of the localisation of food systems. There are certainly, in many cases, problematic relations of social exploitation and ecological devastation implicated with global supply chains, but this is not necessarily the case. The point should not be if, in absolute terms, something is transported from far away but rather a reflection on the quantity and quality of such relations [73]. There is no doubt that the global social metabolism needs to be reduced [24,25] and that the food system needs to be part of this. But then, looking at data, the first point should be to reduce the forms of food trade linked to animal products, while there may be arguments to think differently about the trade of such forms of plant-based products, which allow for diversified and healthy plant-based nutrition everywhere. Certainly, though, the conditions of production must also be considered, contrasting large-scale monocultures, exploitative working conditions, etc., thus favouring only quotas of production for export, which are compatible with diversified economies in the places of production. And then, the conditions of trade itself need to become more equitable and solidary.

In sum, a CRFS approach needs to take into consideration and assume responsibility for relations that constitute city regional food systems that transcend, by far, territorial boundaries. In this context, it should certainly aim to reinforce local food systems, but it also needs to take into account relations and supply chains that are implied in it at all scales, assessing and critically discussing the if, the what, the how much, and the how of these exchange relations. Planetary urbanisation cannot simply be substituted by autonomous city regions; rather, it needs to be “undone” through multiscalar and complex processes [49], of which a well-understood CRFS approach could be a part, and also when the wider relationalities it is part of are adequately recognised. In a case like Turin, this might mean much less meat to be imported and coffee and chocolate imported in somewhat lower quantities but from fair trade chains at somewhat higher prices (the equitable access to their consumption then is, of course, a further relevant question in

terms of social equity)—but it does not necessarily mean that, in winter, one can only eat pumpkins, cabbage, pears, and apples and coffee to be substituted by barley.

#### 4. Towards Sustainable and Sufficient CRFS beyond Growth

As we have discussed in the introduction, the CRFS approach needs to be understood both as an analytical scheme and as a framework for the transformation of food systems [5]. We argue that this double meaning creates a certain ambiguity in the literature between an analytical and a normative dimension, as it remains often unclear if the reference to the CRFS of a certain city refers to an empirical reality or a project. To overcome this ambiguity, we suggest understanding the CRFS as such as an analytical concept that comprises the actors and functioning of a food system in a city region, as discussed in Section 2. If the CRFS is understood as analytical, this should not imply abandoning its transformative scope but rather defining it more clearly. We suggest clarifying this normative dimension by proposing the framework of Sustainable and Sufficient City Region Food Systems. In this section, we will discuss the rationale and the defining characteristics of this framework.

Sonnino [19] has studied the perspective of food system transformation at the urban scale, with specific reference to the CRFS. They noted both at the theoretical level and in their empirical study, based on interviews with actors involved in food system transformation, both at the global scale and the local scale in the UK, a certain difficulty in developing strategies for concrete systemic change based on “co-benefits” between different goals of sustainability. We contend that this difficulty is not only due to a limited capacity of developing strategies due to limited information (causes which Sonnino and their interviewees analyse convincingly) but that it also has a structural dimension: the issue is the underlying assumption that all dimensions of sustainability when understood as sustainable development, as framed by the UN’s Sustainable Development Goals, can be reconciled. The growth and development critical literature shows the hidden costs of the ideology of development [73,74] and argues convincingly for recognising the impossibility of decoupling continued economic growth from ecological and social impact and destruction [24,25]. The causes for this impossibility lie in a series of phenomena, among which cost-shifting practices, i.e., mechanisms through which (apparent) sustainability in one place is achieved through the externalisation of impactful practices elsewhere, and rebound effects, i.e., when gains of efficiency are eaten up by the increase of consumption levels incentivised by the lower costs of consumption thanks to efficiency, are probably the most relevant for the present discussion [24,25]. Furthermore, if many of the problematic issues of existing food systems are due to an uncompromising drive for profit-making, it is important to consider one of the root causes of this logic: the commodification of land [75].

Taking the learnings from these discussions seriously means that if these issues remain untackled, there is necessarily a structural limitation to the possibility of reconciling different goals of sustainability. This is evident, for instance, in relation to the phenomenon of planetary urbanisation discussed in the section above, which is fundamentally a consequence of the drive towards unlimited growth, which is unavoidably destructive due to the ever-increasing quantities of matter and energy it requires and the following necessarily increasing tendency of subjugating and operationalising rural areas, transforming them into passive hinterlands, and global agro-industrial food systems play an important part in this [49]. Consequently, for a real chance to make (city region) food systems sustainable, the systemic goal of growth needs to be problematised.

So far, the literature that discusses food systems from a growth-critical perspective is quite limited. In their review, Guerrero-Lara et al. [26] furthermore argued that most existing degrowth discussions in relation to food are limited one-sidedly on small, bottom-up projects of alternative food production, neglecting both other dimensions of food systems (such as supply chains, processing, distribution, and consumption) and the larger scale of food systems and their complexity. Similar to CRFS, there is an emphasis on relocalisation but without engaging effectively with the complex multiscalar reality of existing food systems. Re-assessing the CRFS approach through a degrowth lens can contribute to an

advancement on both sides; an analytical CRFS approach can provide the right perspective to understand the systemic, scalar, and territorial complexity of food systems, while a growth-critical or degrowth approach can contribute to a more critical understanding of sustainability and the conflictual interaction between its various dimensions.

In this context, we propose understanding the normative dimension for food system transformation of the CRFS approach more precisely as one of building Sustainable and Sufficient City Region Food Systems. The proposal of Sustainable and Sufficient operates with the goal of contributing to a just ecological transformation, recognising the lesson of growth-critical analyses. This is achieved in the first place by incorporating the concept of sufficiency. Sufficiency reconciles social and ecological goals through the recognition of both minimum levels of resource use necessary for dignified living standards and maximum sustainable levels of resource appropriation in a global justice perspective [76–78] instead of aspiring to growth as a goal as such. Considering the distribution of ecological impacts in the food system, with the predominant role of animal products, this perspective suggests, for instance, arguing for limiting the consumption of animal products in quantitative terms without obliging anyone to become vegan; it is a question of global quantities rather than individual perfection. At the same time, sufficiency in food consumption also refers to the right for all to access a good and various diet.

Secondly, in spatial terms, this framework recognises the importance of the relationality of space and of not limiting analyses and policies to pre-defined borders. This is certainly already part of the original formulation of CRFS, but as we have tried to argue in Sections 2 and 3, these features are not easy to define and are worth discussing in detail. Concretely, this should imply reflections about the interaction of local, regional, national, and global food supply chains and the goal to take a “local responsibility for the global” [15], transforming extractivist into solidary trade relations [27,79]. Today’s global food system, more often than not, subjugates rural landscapes, transforming them into operational landscapes of extended (planetary) urbanisation [23]. Building Sustainable and Sufficient CRFS can be understood as a strategy for undoing planetary urbanisation [49]. This, in relation to food systems, regards, to be sure, not only a relation between the global North and the global South but also an urban dominance over the rural, both in reality and in discourse [26,28]. A CRFS approach is well positioned to change this relationship as it aims to include rural areas in the definition of food systems and relative policies.

Such food system transformations can hardly come about without a certain degree of conflict; the existing CRFS approach seems to assume a certain peaceful automatism of transformation once everyone agrees on the CRFS as a framework. But, if overcoming the goal of economic growth at all costs is crucial to achieving sufficiency and solidary relations between the global North and the global South, as well as between the urban and the rural, then this also regards economic interests. In workshops in the metropolitan area of Turin, where we are in the process of discussing food system change at the city region scale, often the goal of guaranteeing access to good food for all has emerged; this is possible by reducing inequalities broadly and/or de-commodifying the food system. In both ways, this challenges the fundamental dynamics of capitalism. It is maybe not a surprise then that those food system actors, which concentrate most power—supermarket chains, large food producers, and industries [27], seem to be particularly difficult to involve in these processes; they seem to operate in a different sphere from those often small-scale and locally active actors who let themselves be involved easily by local administrations when it comes to discussing a change in food systems. But it is in supermarkets where most food is sold [80], at least in Turin. As Guerrero Lara et al. [26] highlight, a food system transformation beyond growth would involve a large process of decommodification, transforming food systems from focused on producing commodities for profit into a common good-oriented system, oriented in the first place not at profit-making but at satisfying the needs of its community of reference—but it would also include, as discussed in Section 3, solidary forms of trade to assure food security globally and guarantee access to a varied plant-based diet everywhere.

## 5. Conclusions

The City Region Food System is a valuable framework for understanding food systems in relation to and as a fundamental dimension of urbanisation. It combines a multidisciplinary approach with a complex understanding of space and scale. In some regards, though, its fundamental openness and broad definition risks creating ambiguities and confusion. We have discussed three issues in relation to the CRFS, as it has been discussed so far in the literature, trying to sharpen its conceptualisation and situate it in relation to specific geographical debates. We suggest that clarifying these issues can help to make this approach more effective in supporting policymaking in city regions.

First, we have looked at the geographical definition of the CRFS as such, reflecting on what repercussions different ways of defining the city region can have on the CRFS. We argue that it is a very ambitious task to identify the “right” dimension of the city region, considering, for instance, territorial overlaps with other city regions and the polycentricity of the city region itself. The definition of the territorial dimension of the city region is crucial in terms of governance because it impacts the identification of the correct institutional level that may activate food policies. While we recognise that institutional innovation is required in order to shift from a restricted urban approach to food policy to a more comprehensive CRFS approach, we suggest that operating a pragmatic choice of adopting the scale of an existing administrative body may not always be the worst option, as it allows to effectively mobilise existing resources and structures for both the analysis and the transformation of the CRFS. Certainly, this pragmatic choice should not lead to ignoring what happens beyond these boundaries. Also, the goal of the CRFS of creating fairer, more inclusive rural–urban relationships cannot be taken for granted but rather must be actively constructed.

Secondly, there are relations that necessarily transcend the boundaries of a city region; we have reflected on the relation between short and long supply chains in the CRFS, critically assessing the call for relocalisation in the literature, arguing that long supply chains should not simply be regarded as harmful, considering that environmental impacts are not always as linearly associated to long supply chains as is frequently assumed and that many long supply chains are profoundly historically and culturally entangled in specific places and are in some places essential to guarantee food security. Rather, these supply chains should be assessed in more detail and transformed from exploitative to solidary. Actively assessing the role of long supply chains in an existing CRFS is, therefore, an essential part of its transformation towards a more Sustainable and Sufficient CRFS.

Finally, we have scrutinised the normative dimension of the CRFS approach, suggesting that using the term “CRFS” both for describing the empirical reality of a city regional food system and for the normative goal of transforming this empirical reality creates ambiguities. More importantly, we suggest that the anchoring of the CRFS approach in the sustainable development paradigm hides contradictions that a growth-critical lens unveils. In this latter perspective, we argue for the understanding of the normative dimension of the CRFS as one of building Sustainable and Sufficient CRFS, evidencing the principle of sufficiency and the ability to reconcile social and ecological goals through the overcoming of the goal of unlimited economic growth and affirming a local responsibility for the global in a relational perspective of space.

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