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AESOP SUSTAINABLE FOOD PLANNING WORKSHOP 2018

**Towards sustainable
City Region Food Systems**



**DIPARTIMENTO INTERATENEEO DI SCIENZE
PROGETTO E POLITICHE DEL TERRITORIO
POLITECNICO E UNIVERSITÀ DI TORINO**

AESOP SUSTAINABLE FOOD PLANNING WORKSHOP 2018

Towards sustainable City Region Food Systems

TORINO
28-30 June 2018

Organiser



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At the interface between global and local forces, today's City Regions are increasingly recognised as the relevant scale for developing integrated and effective solutions to build more sustainable, just and secure food systems. Current paradigms are moving beyond the idea of City Regions as geographically bounded places towards conceiving them as dynamic spaces of interactions, as grounds for innovative interventions for policies and actions able to overcome the traditional urban/rural dichotomy. In the last decade, local institutions, civil society initiatives, multi-stakeholder and multi-purpose organisations, but also networks of producers and consumers have implemented innovative practices and policies, offering context-specific solutions for designing and developing resilient and equitable City Region Food Systems (CRFSs). Often the outcome of contested political processes and complex spaces of negotiations, these new practices and policies have challenged mainstream thinking and top-down institutional dynamics to develop new urban-rural interactions on food-related issues.

CRFSs have recently received increasing attention as a promising territorial approach to urban food systems. They consider the city and its rural hinterland as a functional and spatial continuum. By focusing on rural-urban linkages in terms of social, functional and agro-ecological interactions, CRFSs have the potential to connect issues usually separated such as food provisioning, processing, marketing, consumption and waste. Moreover, CRFSs have recently been considered crucial in integrating planning, climate change adaptation and disaster-risk reduction, both at the urban and territorial level.

Despite a growing number of diverse food-related initiatives in cities, research and policies inspired by the concept of CRFS remain still marginal. Most cities ignore the contribution of the rural hinterland in building sustainable plans and projects, and producers in the hinterland hardly sell their products directly to urban markets.

This workshop aims at improving the understanding on how City Region Food System can serve as a key framing concept to improve mainstream planning, business and governance processes, and as a practice to nourish the development of more sustainable, resilient and agro-ecological food systems.

Organiser of workshop is the **PhDs and Young Professional Team** of the **AESOP Sustainable Food Planning Group**. The Team connects early stage career researchers, policy-makers and practitioners in the field of sustainable food planning from all over the world. It aims at creating a dedicated space for collaboration, learning and exchange among peers during (and beyond) the AESOP Sustainable Food Planning Conferences. The Group organises side events during the annual conferences, but also webinars and workshops throughout the year.

In 2017, for instance, two workshops have been organised. In March, in Berlin, a two-day event was hosted by the Georg-Simmel Centre for Metropolitan Studies with a keynote speech by Katrin Bohn, a training session about networking by Neela Enke (see fig. 1) and several sessions

PRESENTATION OF THE SPECIAL ISSUE

Figure 1. *Networking session by Neela Enke during the AESOP SFP workshop in Berlin.*
Source: Radu Mircea Giurgiu.





Figure 2. *Field trip to Allmende Kontor during the AESOP SFP workshop in Berlin.*
Source: Radu Mircea Giurgiu.

dedicated to individual presentations by participants. On the second day, the group went on a field trip to the Allmende Kontor (see fig. 2) (one of the biggest community gardens in Berlin), located in the former Tempelhof airport.

In Coventry (UK), in November, a one-day event took place one day before the 8th Annual Conference of AESOP Sustainable Food Planning Group, hosted by the Centre for Agroecology, Water and Resilience at Coventry University. This workshop included 3-minute thesis presentations and one training session about academic publishing. Participants also had the pleasure to attend a masterclass with professor Kevin Morgan from Cardiff University. After his speech, filled with his personal experience as an expert researcher in the field of food systems sustainability, participants had the opportunity to interact with him, through questions and discussions about a great variety of topics connected to food.

Do you want to be part of the Team? Please contact us!

Radu Mircea Giurgiu (coordinator of the Team) radu@plantgeek.eu

[DAY 1] Thursday June 28th

Room: Sala della Caccia

- 13.00 - 13.30 Registration
- 13.30 - 14.00 Institutional welcome and opening remarks
Giulio Mondini, Head of DIST Department, Politecnico di Torino
Marco Santangelo, representative for international relations of DIST
Alberto Unia, Alderman for environment, Comune di Torino
- 14.00 - 14.45 First Keynote speech: **Egidio Dansero**
- 14.45 - 15.15 Q&A
- 15.15 - 15.30 Coffee Break
- 15.30 - 16.15 Second Keynote speech: **Andrea Calori**
- 16.15 - 17.45 Q&A and open discussion with keynote speakers
- 17.45 - 18.00 Wrap-up

WORKSHOP PROGRAMME

[DAY 2] Friday June 29th

Room: 4V

- 08.45 - 09.00 Opening
- 09.00 - 10.45 Interactive training session on Public Speaking and Communication (**Lorenzo Tesio**)
- 10.45 - 11.00 Coffee Break
- 11.00 - 13.00 Session for 3min individual presentations and feedbacks
- 13.00 - 14.00 Lunch
- 14.00 - 16.00 Interactive training session on PhD conflict management (**G. Pettenati & M. Santangelo**)
- 16.00 - 16.20 Coffee Break
- 16.20 - 16.50 Report from the morning sessions
- 16.50 - 17.20 Wrap-up
- 18.45 - 19.30 Interactive session on Torino food policy with **Simone Mangili**
- 19.30 - 21.00 Joint Dinner @ [ViaBaltea3](#) (*optional*)

[DAY 3] Saturday June 30th

- 09.00 - 13.00 Field trip
- 13.00 - 13.15 Farewell
- 13.15 - 14.30 Joint Lunch @ [La Locanda nel Parco](#) (*optional*)





WORKSHOP CONTRIBUTIONS

CLOSING THE LIFE CYCLE OF PHOSPHORUS IN A SELF-SUFFICIENT REGIONAL FOOD SYSTEM: THE CASE OF ALMERE (NL)

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Abstract. *This scenario study explores the potential of a regionally self-sufficient food system, in terms of Phosphorus (P) flows in food. The study was executed for Almere (195,191 residents; NL). The current condition in Almere with 5% local food production and a limited P recovery from waste is compared with a scenario of 85% regional food production and 90% P recovery from waste. This Self-Sufficient region scenario requires 27,000 ha of crops, of which 24,000 ha is needed to feed livestock. Within this 27,000 ha the P flow in the food chain of Almere is nearly closed. It is argued that a regionally self-sufficient food system based on a regional P flow is technically feasible, however the step from scenario towards reality requires a fundamental change of our food and waste system.*

Keywords – Self-sufficiency, city region food systems, circular systems, Phosphorus, food foot print.

Introduction

The worldwide debate about sustainable and healthy food systems revolves around the question whether the future has a global or regional level of organisation. This study takes the regional junction in a search for measures to maintain future food productivity whilst decreasing dependence on external resources. The external resource Phosphorus (P) is key in this study. P is vital to the growth of all organisms; it thus is a vital element in future food systems (Cordell *et al.*, 2011). P is mined from rock. Today, around 90% of the mined P is used in our food system (Neset & Cordell, 2011). However, the P reserves are finite and there is no alternative.

Opposite to future P scarcity is the current inefficiency, loss, spill, and leakage throughout the food chain from mining to consumption. Only one-fifth of the mined P finds its way to the global consumer (Cordell & White, 2014). After being consumed, the P leaves the food system through the sewage system. In the Netherlands around 80% of the P in waste water ends up in sludge (Van der Grinten *et al.*, 2015). Sludge is predominately incinerated and wasted; the ash finds its way in, for example road construction. However, it is technically feasible to recover P from sludge and to reuse it in the food chain.

With this backdrop in mind, the central question of this study is: *how does a circular regional food system look like from the perspective of P flows in food?*

Methodology

This study takes Almere as starting point. Almere is a Dutch city located in the Flevo Polder 30 km east of Amsterdam. We designed a “Self-Sufficient region” scenario in which nearly all feed and food crops are regionally grown in the Flevo Polder. Only food products that cannot be grown in the Netherlands (for example coffee, exotic fruits) are considered as imported; in this scenario it is estimated that 15% of the daily food basket is still imported. Another starting point in this study is that 90% of the P can be recovered from waste. This 90% figure refers to a potential recovery percentage estimated by De Ruijter *et al.* (2015).

We compared the Self-Sufficient region scenario with the current situation in which about 5% of the food basket is regionally grown and in which some organic waste is reused locally (garden and kitchen waste). Our calculations started with the intake of food in Almere. We derived the food intake of different food product groups from a national survey carried out in 2007-2010 (Van Rossum *et al.*, 2011) and used these figures to calculate the intake of the 195,191 inhabitants of Almere (Almere, 2013). Each food product group from the national food intake survey was connected to model food products (e.g. bread as model food product for cereals intake). We linked these model food products to primary products that are produced on farms (e.g. bread is linked to the wheat crop). We assumed that 30% of wastage occurs throughout the food chain. Subsequently, we calculated the needed amount of primary production of each food product group. Based on crop yields and animal production data of the farms in the Flevo Polder, we derived the area demand of the food and feed crops. The P flow to sustain the food production in this Self-Sufficient region scenario was set equal to the P removal with harvested food and feed crops.

Results

In the Self-Sufficient region scenario about 27,000 area is needed to feed the 195,191 inhabitants of Almere. Nearly 90% of this 27,000 ha is required to feed the livestock. In addition, the production of dairy products takes 52% of the 27,000 ha. The production of plant based products requires 3,000 ha; of which 65% is needed for cereals, 15% for sugar beet, 10% for fruits and about 10% for potatoes and vegetables. Figure 1 shows the impact of the Self-Sufficient region scenario for Almere. The 27,000 ha corresponds to a “food foot print” of 1,400 m² per resident per year in Almere.

The Self-Sufficient region scenario potentially leads to a nearly closed P circle in food. The estimated import of P is 46,000 kg. This is one third of the current situation, in which 154,000 kg P is imported with food, feed and fertilizers. The import of P in manure and fertilisers is still necessary to equal

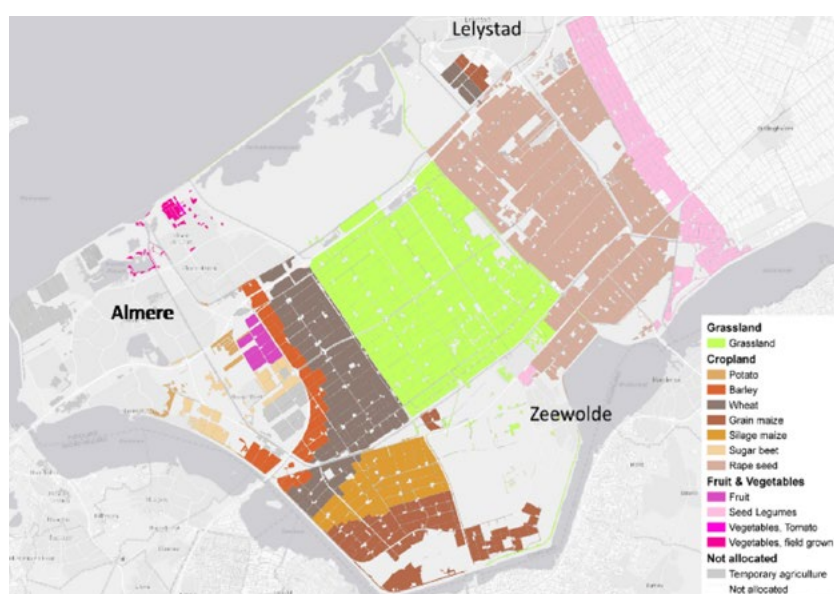


Figure 1. The 27,000 ha of the Self-Sufficient region scenario of Almere (195,191 inhabitants), allocated in different crops. Source: Elaboration by the authors

the loss of P in the Self-Sufficient region scenario. The loss of P is caused through: (1) the recovery of P from waste is max. 90% and (2) the export (out of the region) of P in non-consumed by-products like whey and organs exceeds the import of P through exotic products.



Figure 2. Phosphorus recovery from sludge at pilot plant of the Amsterdam water board Waternet
Source: JE Jansma.

Discussion

This scenario study demonstrates that it is technically feasible to develop a circular regional food system that sustains P. This regional food system, which would cover 85% of the food basket of Almere requires 27,000 ha of farming land. The 27,000 ha equals all farming land in the municipality of Almere plus two adjacent municipalities in the Flevo Polder.

Two basic assumptions are fundamental to this study: 90% P recovery and regional food provenance. In practice the 90% recovery figure is not realistic, although several waste water treatment plants in NL do recover a part of the P from sludge via struvite. A question this study does not touch upon is at what organisational level is the recycling of P most effective, for example at household level, at the street level, at city level or at the regional level? In addition, we assume that there are no technical, financial, environmental, agricultural, and legal thresholds to reuse P from waste. The second assumption is that the required food can be regionally produced, processed, distributed and purchased in an economically, environmentally and socially

sound way. A regional food system, with only 15% import of food, as suggested in this study, is far from reality in the Almere region where approximately more than 95% is imported. Although some Dutch cities, including Almere, aim at 10-20% of regional products in the urban food basket, that figure is still far from the 85% in this study.

A regional food production that meets up to 85% of the consumption requires a per capita land use of 1,400 m² per year. This figure is relatively low compared to similar studies from The Netherlands and abroad because of two reasons. Firstly, not all food products are grown regionally which means that land abroad still is needed. Secondly, the production levels of crops in the Flevo Polder are among the highest in the Netherlands, and additionally the Netherlands has high crop production levels compared to international standards.

This study underlines that a regionally self-sufficient food system based on a regional P flow is technically feasible. However, the step from scenario towards reality requires a fundamental change in how the food and waste chain is organised: from farm to fork and from disposal to dung. The change starts with a decreased use and loss of P throughout the food chain, and should be combined with maximum reuse of P from waste, whether these changes are organised locally, regionally or globally.

Acknowledgments

This study is carried out within and funded by the Metropolitan Solutions Program of Wageningen University and Research. We acknowledge Izak Vermeij (Wageningen Livestock Research) for providing data on animal production and Michiel van Eupen (Wageningen Environmental Research) for designing the map that depicts the impact of the scenarios. The report of this study is available through <http://edepot.wur.nl/411393>.

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ALTERNATIVE FOOD NETWORKS IN TIMES OF CRISIS: A DIALECTICAL CO-CONSTRUCTION PROCESS

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Abstract. *This article places itself within a debate that has developed over the past few years around alternative food systems. By combining insights from Alternative Food Networks (AFNs) literature, among the contemporary economics and social crisis, this paper would show how AFNs are evolving in the Global World. It will be displayed how - and in which way - the economic crisis has been shaping AFNs initiatives, which seem to be more developed after 2008, in both Global North and Global South. To reach these goals, data collected in two different contexts – Italy and Brazil - will be compared as follows: firstly, it will be presented the diachronic evolution of AFNs initiatives for each case-study, then, following a qualitative approach, it will be analysed the crisis impact.*

Keywords – Alternative food networks, social movements, economic crisis.

Introduction

Food is becoming an increasingly disputed issue, and food movements have emerged both in the global south and the global north (Morgan, Marsden, & Murdoch, 2008). The agro-industrial food system presents environmental, social and economic costs that are often borne by local communities. What has been labelled by the international literature as AFNs (Renting, Schermer, & Rossi, 2012), seems to be considered as part of Sustainable Community Movement Organizations (Forno & Graziano, 2014), which are resisting toward the mainstream food system creating alliances among different actors. AFNs are non-conventional channels of food distribution, which connect producers and consumers, promote a new concept of ‘food quality’ that respects local economy productions and eating traditions, sustain social development and business relations based on trust and community engagement (Venn *et al.*, 2006). At the same time, the economic and social crisis has been affecting the global world (Stiglitz, 2009). The crisis appears structural and multidimensional (Castells *et al.*, 2012), and it has been influencing individuals in their every-day life, but at the same time it has created new opportunities, especially for relatively young people.

This research would investigate whether the crisis affects Italian and Brazilian AFNs and the related degree and reasons of possible influences toward this kind of initiatives.

Methods

To reach the above-mentioned goals, the aim of this research project is firstly to compare AFNs initiatives in two specific contexts, thus a medium-sized city in Italy (Bergamo), and another one in Brazil (Florianópolis). The two contexts have been selected considering a series of variables:

- 1) Dimension: The two contexts have approximately the same population (1 million people) and similar territorial extension 2.500 km² for the Grande Florianópolis and 2.700 km² for the Province of Bergamo .
- 2) Presence of activities (AFNs): in both territories AFNs are numerous and increasing.
- 3) Role of Universities: crucial in both contexts.

The research plan was divided in two separated steps: I. the 'pilot-work', for collecting environmental and historical useful knowledges to better understand how and what could be investigated, especially in Brazil (January-March 2017) II. the field-work, for collecting data regarding both AFNs evolution, and information on farmers involved in AFNs (June-December 2017). Hence, the research design is resumed as follows:

Research Step	Research Method	Province of Bergamo	Micro-region of Grande Florianopolis
Pilot Work	Environmental data collection and preliminary interviews	14 in-depth interviews with AFNs' producers 11 of them → video-taped for a short movie about Short Food Supply Chain in Bergamo.	- 1 collective interview with an Ecovida's group of producers - 2 in-depth interviews with the boos of a supermarket and a couple of family farmers' - 4 video-taped interviews with producers - confidential interviews with volunteers, producers, group of fishermen, and activists - Ethnography in 4 four farmers' markets, 2 organic supermarkets
Field-Work	In-depth interviews	14 in-depth interviews. All interviews were tape-recorded and then transcribed verbatim.	14 in-depth interviews. All interviews were tape-recorded and then transcribed verbatim.
	Semi-structured interviews	25 semi-structured interviews with AFNs' farmers. All interviews were tape-recorded and then transcribed verbatim.	25 semi-structured interviews with AFNs' farmers. All interviews were tape-recorded and then transcribed verbatim.

Table 1. *Research design*
Source: *Elaboration by the author.*

For this article, data collected through the AFNs mapping, in-depth interviews with key observants, and the preliminary data analysis from the semi-structured interviews with farmers - in both case-studies - will be used, considering variables related to the economic crisis impact.

Preliminary findings

Geographically, AFNs are located along the urbanized area in both contexts, even though the physical structure of the cities is different. What emerged in both contexts is that AFNs are increasing despite economic and social crisis. In the Italian case study, it emerged that the SPGs remarkable growth has slowed down notably around 2010. On the other hand, since mid-2000s, other

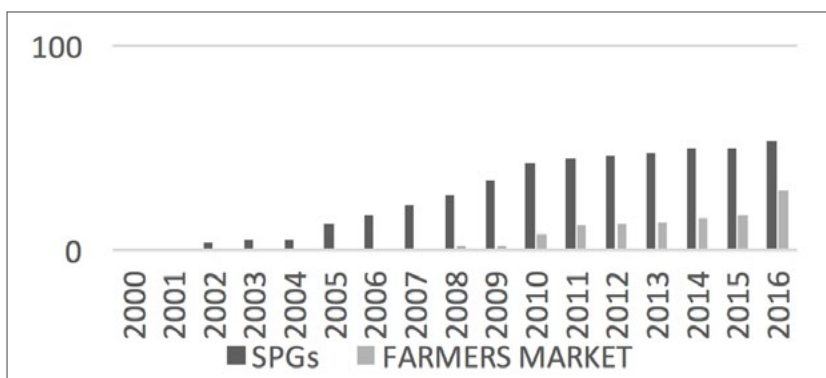


Figure 1. *AFNs in Bergamo.*
Source: *Elaboration by the author.*

forms of AFNs appeared, such as farmers' market (almost 30 in 2016), food assemblies, multi-functional farms, and so on (see Maurano & Forno, 2017). Moreover, since 2007 the citizen solidarity economy network (Sustainable Citizenship) has been created, which is playing a central role in spreading AFNs practices, being also involved with the local administration within the Agriculture Round-Table, a sort of a Food Policy Council.

In Brazil, as well as Italy, AFNs have been springing out. Contrary to Bergamo, where consumers' initiatives were pioneers, in Florianopolis, the first AFN initiative (a farmers' market) was implemented within the University, thanks to researchers and Cepagro NGO that have involved local producers belonged to Rede ECOVIDA, one of the most important solidarity economy network in the World. The Federal University is directly playing a central role to spread AFNs initiatives like SPGs. In Brazil, just along the last years, consumers' initiatives (6 SPGs and 3 Community-Supported Agriculture, CSAs) are surfacing, while farmers' markets are already structured in several parts of the urban area (13 farmers' market mapped).

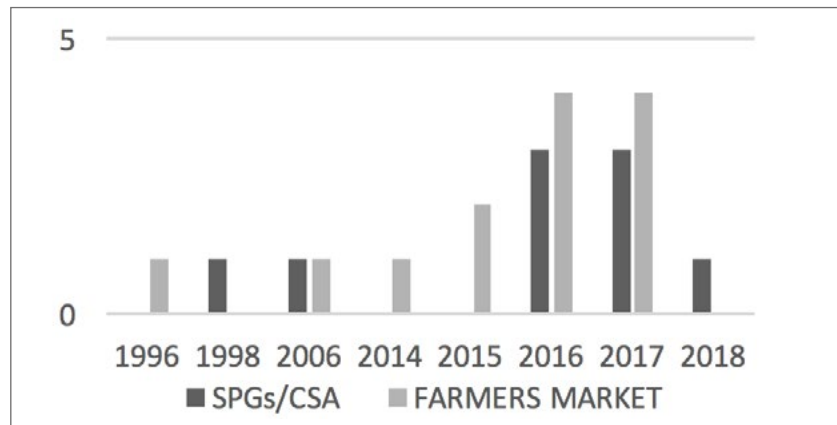


Figure 2. AFNs in Florianopolis.
Source: Elaboration by the author.

However, the political crisis in Brazil has been deeply affecting the everyday-life:

Political crisis is extremely negative: we are living in process where people don't what will happen. They are removing all rights. They are stopping all the achievements of the last years. Just in agriculture, one of the first decision of the coup was destroying the Minister of Rural Development (Actor n. 21, Florianopolis)

Nevertheless, in both contexts there are more young people who are going back to the farmland (32/50 farmers interviewed are born after the 70s), testifying opportunities offered by both economic crisis (15/19 activities started after crisis are leaded by people born after the 70s), and by growing demand for organic (or at least, more sustainable) products.

Discussion and conclusion

In Italy AFNs appear to be fostered mainly by the activism of consumer-actors (see Guidi & Andretta, 2015) being the strong presence of SPGs within the metropolitan area. What previous researches - and this one - have demonstrated is that the economic crisis, the impoverishment of the middle class, and the greater citizen awareness on economic, social and

environmental sustainability issues have shaped the form of development of this type of collective action (Maurano & Forno, 2017). Contrary, in Brazil, AFNs are mostly encouraged by the Rede ECOVIDA and University's engagement. What emerged is that economic crisis has not been affecting AFNs initiatives yet, which are increasing. Most interviewed people have confirmed the idea of Castells et al. (2012): current economic crisis offers opportunity to develop alternative practices among the urban (and peri-urban) landscape, especially highlighting the direct engagement of relatively young people. However, the consumers' awareness is still weaker, and more focused on their own health, rather than Italy. It explains why Brazilian AFNs are mainly built by local producer organizations. Finally, political and social crisis appears to be more rooted and worrying, but it should also be observed together with future economic trend, to assess its impact.

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THE HYBRID GOVERNANCE OF ALTERNATIVE FOOD SYSTEMS HIGHLIGHTS FROM THE BRUSSELS- CAPITAL REGION (BCR)

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Abstract. *This short paper summarizes content and preliminary results of an ongoing research project on the “Hybrid Governance” of Alternative Food Systems in Urban Regions. Hybrid Governance pinpoints to the tensions created by the interactivity among different governance forms (i.e. solidarity, networked-horizontal, state, market-driven) and the ways these tensions are experienced by local food initiatives, conditioning their diverse modes of outscaling or upscaling. Three types of governance tensions are identified: organizational, resource, and institutional. The Brussels-Capital Region (BCR) is the main case study context, mirrored by a comparative analysis with the case of Toronto. Thus, the scope is to provide a fine grained socio-political analysis of the governance of local food initiatives and the challenges at stake in governing a regionally based alternative food system.*

Keywords – Hybrid Governance, Governance Tensions, Alternative Food Systems, Organizations, Resources, Institutions.

Introduction

The agro-food literatures have made progress in highlighting governance challenges and tensions of Alternative Food Networks by addressing key problematics such as: the tensions between values and scalar dynamics of bottom-up initiatives (Campbell and MacRae 2013; Mount 2012; Rossi and Brunori 2010), the problematics of quality land availability and accessibility (Purcell and Tyman 2014; Tornaghi 2017; Wekerle and Classens 2015); the challenges of food systems to urban planning, policy and multi-scalar state structures (Blay-Palmer 2009; Cohen and Reynolds 2014; Mah and Thang 2013; Morgan 2015; Moragues-Faus and Morgan 2015; Ilieva 2016). Yet these literatures do not sufficiently account for the interaction between the different forms of governance (i.e. solidarity oriented, networked governance, hierarchical-state governance, corporate-market oriented) and how, as an organization or institution develops, different governance tensions arise.

This project aims at filling this gap by asking the following questions: a) What are the key governance tensions Alternative Food Networks (AFNs) face as they develop/diversely out-scale? b) How these tensions relate to each other (e.g. reinforce/appease each other)? c) Where are these tensions leading to (i.e. outcomes and opportunities to overcome, valorise, or learn from these tensions)?

To answer these questions the project introduces the conceptual framework of Hybrid Governance and applies it to the analysis of local food initiatives as well as institutional food policies in the Brussels-Capital Region (BCR). AFNs are analysed as they diversely scale out, building alliances, coalitions, advocacy-networks, claiming changes in land use or food systems’ regulations, thus diversely interacting with other actors of the local food and institutional arena of the BCR. A comparison with the governance trajectories of the Toronto food movement is also carried out, thus cross-fertilizing and drawing lessons from both cases.

Theoretical framework

The theoretical framework combines different governance literatures, i.e. theories of Social Innovation and collective action (Moulaert *et al.*, 2005, 2010, 2013), sociological-institutionalist and multi-scalar approaches to governance (Jessop 2002, Moulaert *et al.*, 2005, 2013, Healey 2006); relational approaches to governance (Allen 2009, Allen and Cochrane 2010, Jessop 2002, Swyngedouw and Jessop 2006). These literatures help to develop a socio-political understanding of governance highlighting interactions and tensions among actors and organizations belonging to different agential and organizational spheres (i.e. state, market, solidarity organizations) and scales of governance. Three types of tensions are identified in the Hybrid Governance Approach as particularly relevant for AFNs (see Manganelli and Moulaert, 2018): organizational (governance) tensions, i.e. tensions in governing the food network organizations as they diversely develop, build alliances, networks, interact with the socio-institutional system in which they are embedded; resource (governance) tensions, i.e. tensions in accessing and securing key resources (e.g. land, funding, material infrastructures, other key human and natural resources); institutional (governance) tensions, i.e. tensions related to institutionalization processes, and to the constraining or enabling role of key institutions with respect to the agency of local food networks. These tensions are closely related to one another. For instance, the need to access land and other resources (resource governance tensions) can trigger the mobilization of self-organizing food initiatives (organizational governance tensions) which may enter into conflict or may build alliances with diverse agents of the institutional system (such as state, market agents, or planning regulations, etc.), which control and regulate the allocation of resources (institutional governance tensions). In synthesis, the framework helps to analytically spell out these tensions and their interactions.

Case studies and methods

This project analyses different cases of AFNs' governance practices in the BCR, using the Hybrid Governance Tensions as entry points for the selection and analysis of case studies. As an entry point to organisational governance tensions, a first case is the Brussels' GASAP (Solidarity Purchasing Groups for Peasant Agriculture). Started in 2006, this Brussels-based spatially extended Community-Supported Agriculture aims at connecting small scale agro-ecological producers directly with consumers in a solidarity based alliance. The project analyses how this initiative starts and develops through time, looking at how different governance tensions arise and manifest all along the different stages of this initiative's life-course (Manganelli and Moulaert, 2018). As entry point to the 'resource' governance tensions, a second case concerns the challenges of accessing land for Urban Agriculture in the BCR. Thus, the project looks at how local actors self-organize and build coalitions in order to access land and scale out this access across the Region. As entry point to the third type of tensions, i.e. institutional governance tensions, the analysis looks at the development of a local food governance at the City-Regional level, comparing the BCR's trajectory with the one of Toronto. The



Figure 1. *Urban agriculture plot in the South West of the Brussels-Capital Region (Vogelenzang).*
Source: Picture taken by the author.

Hybrid Governance analysis is used to assess how key governance tensions triggered through time the reflexivity and co-learning dynamics in key actors and organizations of the local food governance, in a way conditioning the institutionalization trajectories of the local food movement in the two cities. To analyse the case studies the project uses a methodology derived from the Hybrid Governance Approach. This methodology translates the Hybrid Governance Tensions into categories for the empirical analysis, which are used to construct questionnaires and carry out the empirical field work on the above cases. Practical methods of data collection concern a mix of mainly qualitative methods, such as in-depth semi-structured interviews, document analysis, secondary data analysis, direct and participant observations with local food initiatives.

Discussions and conclusions

This research aims at advancing the current debate and inform the practices on Alternative Food Systems' governance in City-Regions. Three key points can be highlighted on the value of the Hybrid Governance Approach for research and practices (see also Manganelli and Moulaert, 2018). First, the Hybrid Governance Approach helps to understand what drives different modes of out-scaling of local food initiatives. It does so by spelling out what leads self-organizing actors to associate, build networks and connect to different agencies and institutions. Second, the Approach can support the 'reflexivity' of local food actors and organizations. It can offer tools to learn from the experienced tensions and develop them into promising directions. Third, overall the Hybrid Governance Approach helps to grasp significant challenges in implementing Alternative Food Systems in City-Regions. Looking at the longer term institutionalization trajectory of the Toronto food movement and comparing it with the development and implementation of the BCR's food policies helps to develop this understanding as well as to suggest relevant ways forwards.

Acknowledgments

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COMBINING NESTED MARKETS AND THE MULTI-LEVEL PERSPECTIVE TO UNDERSTAND THE AGROECOLOGICAL TRANSITION OF THE FOOD SYSTEM

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Abstract. *A twofold framework based on nested markets and the multi-level perspective on sustainable transitions is presented. We argue that there are promising intersections between these interrelated concepts, which are useful to understand the emerging dynamics of new markets, their relations with the broader food system and their potential to sustain more sustainable food practices, as illustrated from a case study in the french overseas territory of La Réunion.*

Keywords – **Nested markets; geography of transitions; multi-level perspective; case study.**

Introduction

Over the last twenty years, scholars in social sciences engaged with “alternative food networks” in order to know how renewed relations between producers and consumers can lead to more sustainable food systems (Forssell and Lankowski, 2015). The social and ecological costs, as well as the distances and disconnections associated with the so called “corporate food regime”, and the more recent variant, the “corporate-environment food regime” are acknowledged (Levidow, 2015). Criticisms have raised against the geographical dualism that puts alternative and conventional food spaces against each other. Researchers have begun to warn scholars about the processes whereby the alternatives are incorporated into mainstream food systems of provision. Sonnino and Marsden (2006) have invited for more nuanced readings and understandings of this “divide”. The danger for scholars and practitioners is also to fall into the “local trap”, by considering the spaces, places and practices of alternative food as free from conflicts and power relations, and thus performing the bias of defensive localism (Born and Purcell, 2006). Our work tries to go beyond these limitations, by applying a twofold framework, in order to understand which market dynamics can support the agroecological transition in Reunion Island (fig. 1).

Theoretical frame

We mobilize the multi-level perspective (MLP) on sustainability transitions and the concept of nested markets. Central to the MLP is the idea that systems (regimes) are “locked-in” to a steady trajectory. Novelties can emerge both inside and outside of regimes, requiring development and/or protection from mainstream regime market trends by niche actors (Geels, 2011). Scholars working on transitions in the farming sector recently argued “*that while markets are more embedded in the MLP conceptualization than is currently recognized (...) little consideration is given to the development of niches for which there may, or may not, be a functioning market*” (Sutherland *et al.*, 2015; pp. 208-209). This statement converges with the emerging field of the geography of transitions (Boschma *et al.*, 2017). According to these authors we argue that there is common ground between economic geography and transition studies, which can provide explanations about the processes of market construction.

The concept of nested markets come from neo-institutional economics. The nested character of these markets must be seen as a response to conventional

global markets, with which they interacting continually, by acting strategies of differentiation and linking with new consumers' demands, thus reducing power asymmetries (Hebinck *et al.*, 2015). In the authors' view, the main features of nested markets justify the adoption of a MLP framework in order to better understand their emergence. The approaches are complementary and their joint mobilization makes it possible to account for lock-in, breaks and more generally the market trajectories within a given system.



Figure 1. The french overseas territory of Reunion island.

Source: Elaboration by the authors

Methods

The following findings are based on: 40 semi-structured interviews realized between December 2016 and February 2018 with various actors of the food system; a bibliographic analysis; a review of regional press (more than 300 articles from 1983 to 1995). Interviews lasted from one hour to one hour and a half, and be sometimes completed by a new exchange in order to fill some lacks or to assess previous statements.

Results from case studies: RQDO AND AMAPEI

The “*Ruche Qui Dit Oui*” (RQDO) is a French based private company which utilises web 2.0 tools to connect local food producers with consumers through a local intermediary which is the point of delivery (fig. 2), an e-commerce platform which allows individuals to take their orders and related bills. The first one was created in July 2012; one year after there were 5 RQDO on the island. There are actually 9 active RQDO on the island, (one is under construction). RQDO is actually spreading in ten countries across Europe (with more than 1100 points of delivery), contributing to the global movement of food relocalization.

AMAPéi is a locally adapted version of the well-known french “*Association pour le Maintien de l'Agriculture Paysanne*”. Péi is a creole word, meaning “local” or “terroir”. These short supply chains are promoted by the “*Conseil Général*” (regional authority), which set up a fund to promote consumers and family farmers' associations. Since 2016 the regional authority in charge of agriculture allowed 30.000euros to every AMAPéi to face operating and investment costs. AMAPéi are managed on e-platforms and are mostly based on urban consumers. There can be one or more farmers. Members participate consciously in an attempt to make the food system more sustainable, but

Figure 2. Location of the ten RQDO existing in the island.

Source: Elaboration by the authors

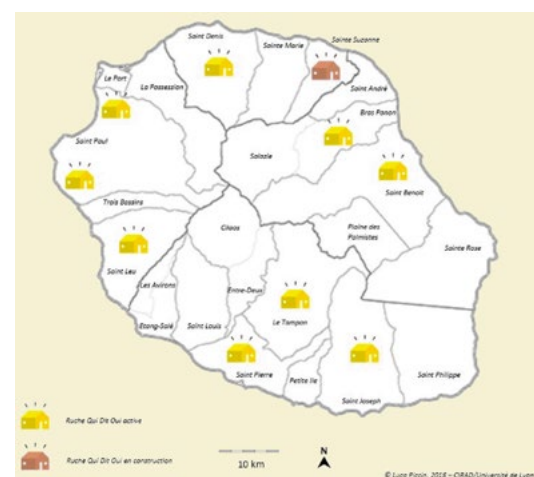
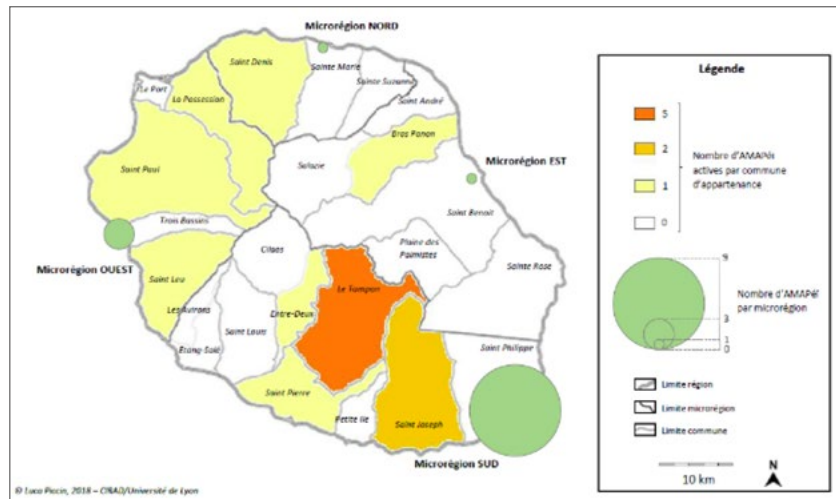


Figure 3. *The uneven spatial distribution of AMAPéi.*
Source: *Elaboration by the authors*



they often go beyond this aspect by engaging with broader activities like permaculture, community gardening, and other so-called makerspaces and subcultures. As shown in figure 3, AMAPéi are less represented in the east part of the island, because the majority of farmers are in the south and the captive demand is mostly concentrated in the biggest cities of St Denis (north) and St Pierre (south) or on the west-coast.

Conclusion

Both AMAPéi and RQDO are present locally but also worldwide, giving more evidence to the fact that transitions are processes occurring at multiple interrelated scales.

These emerging markets spread in the last five years. Key reasons of this success are: the diffusion of Internet, which can allow the circulation of knowledge and the connection between consumers and farmers; the support of local authorities; a shift in values towards new forms of more meaningful citizenship engagement, that can also be seen in other nested markets like box schemes, bulk sales and community gardening. Our findings suggest that nested markets are niches which can be considered as precursors of potential markets for new goods and services. As such, they constitute useful tools for the transition to more sustainable food systems, offering answers both to the new needs of civil society and to rural and peri-urban areas.

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INCLUSIVENESS IN ACCESSING HEALTHY AND SUSTAINABLE FOOD

FOOD PRACTICES OF URBAN MIGRANTS

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Abstract. *The need for a shift to healthier and more sustainable diets is evident, yet a major challenge to be overcome is the problem of inclusiveness in accessing healthy and sustainable food. This issue is also relevant in western contexts, where currently only a select group of well-off consumers or a 'green elite' seems to access healthy and sustainable food. This paper aims at studying inclusiveness in accessing practices of healthy and sustainable food among the migrant population of the Dutch city of Almere. The theoretical framework used is the practice theories approach which is applied to the key concepts of accessing and inclusiveness. A mixed methods approach will be used, including visual research methods.*

Keywords – inclusiveness, access, healthy and sustainable food, cultural exclusion, practice theories.

Introduction

In light of serious threats from global climate change and an increasing world population, the need for a shift to healthier and more sustainable diets across all of society is evident (Garnett *et al.*, 2014; Lang, 2017). Currently, only a select group of well-off consumers seems to access healthy and sustainable food (Gilg *et al.*, 2005; Hines *et al.*, 1987). This 'green elite' consists mostly of white, female, well-educated and high-income citizens (Carabain *et al.*, 2016). Healthy and sustainable food seems to remain a privilege and an upper class niche, which begs the question of what hinders and facilitates people in accessing healthy and sustainable food.

Three aspects of food practices are highlighted here as relevant for approaching this question: (i) the conflicting relation between health and sustainability in diets; (ii) different understandings, lifestyles and backgrounds among population groups; and (iii) changes in practices and environments over time. Firstly, a growing body of literature integrates the two aspects of health and sustainability in an overall 'sustainable diet', which Lang (2017) defines as a diet which is health-enhancing, has low environmental impact, is culturally appropriate and economically viable. However, research also shows that health and sustainability do not always converge in dietary guidelines (Fischer & Garnett, 2016; Kramer *et al.*, 2017; Nelson, 2016; van Dooren *et al.*, 2014). To put it in Garnett *et al.* (2014:29)'s words: "*the relationship between health and environmental sustainability can best be viewed as an arranged marriage, rather than a love match*".

Secondly, people have diverse understandings of health and sustainability, which influences accessing practices. Additionally, understandings of what constitutes a 'good' diet vary across population groups (Guthman, 2008). In the organization of daily life and in food practices specifically, different ends and concerns compete for priority. Health and sustainability have to contend with other elements directly (quality, safety, price) or indirectly related to food (family care, ethnic identity) (Dixon & Isaacs, 2013; Miller, 2013). Thirdly, food practices also change over time and are rhythmic: they are affected by major life events or by religious rhythms. Therefore, to understand accessing patterns of healthy and sustainable food means to understand these practice dynamics within their physical and social context.

Evidently, accessing healthy and sustainable food happens in diverse ways, yet some practices and perceptions are more dominant than others and can constitute inclusivity challenges. For instance, understanding sustainable food as regional food is fashionable, but regionality may not resonate across cultural and socio-economic backgrounds and regional food is commonly not sold at central locations and is often more expensive, which raises serious issues for inclusive accessing.

Outline of the study

This study aims to explore inclusiveness in accessing by looking beyond prevailing conceptions only and studying diverse interpretations and expressions of the concepts of health and sustainability within accessing (Lagunas *et al.*, 2017; Lu *et al.*, 2018). Specific attention will be paid to how people themselves perceive of in/exclusion in their food practices, how they cope, how practices do or do not adapt and what practices emerge both in consumption and provision. In short, this thesis asks the question what inclusive accessing would look like and what it would mean for the food system, where food consumption, provision and policy practices meet. Recognizing the importance of inclusiveness will lead to different kinds of strategies for addressing the issue of promoting healthy and sustainable diets and involve more people in the transition towards a better food system. The research will study accessing practices of healthy and sustainable food among a specific urban population group: migrants. This group is selected primarily based on their experiences of de- and reroutinization in daily life. Due to (forced) migration, people have faced explicit de- and reroutinization in their habits and practices. This turn allows particularly well for studying practices, as it is when routines are broken that reflection usually occurs: when the physical environment is different, when other practices change or when the body changes, performances of practices alter and meanings and understandings come to the surface (Warde, 2016).

The main research questions that will be addressed in the research are therefore the following: What do migrants' food accessing practices and their trajectories look like; how is health and sustainability made sense of within them; how is in/exclusion perceived and coped with; what practices emerge; and how does this relate to existing food provisioning practices and policies?

The research will take place in the Dutch city of Almere, which provides for a relevant living lab for studying inclusiveness. Like many modern cities, Almere comprises people with a wide variety of ethnicities, different incomes and levels of education. Culturally, Almere is specifically diverse, with 153 different nationalities and over 40% of its population consisting of people with a non-western back-ground (Gemeente Almere, 2013). In terms of health, welfare related diseases, like overweight and obesity are relatively more prevalent in Almere than in the Netherlands in general (RIVM, 2012), particularly among some ethnic groups such as the Surinam residents.

Methods

To map the variety and diversity of migrants' accessing practices and to identify the most important topics for further qualitative research, a survey will first be held among the target population of migrants in Almere to outline the playing field. Based on this survey, central themes will be selected that require further qualitative depth and embedding and will be highlighted during interviews and observations. To explore more in-depth the particular lived realities and performances of accessing practices and to observe in reality the doings and sayings of these practices, participant observation will be done among a small number of selected households in their practices of buying, preparing and consuming food, following insights from Dubuisson-Quellier (2006) and Miller (2013). In addition, for 'thick' understanding of sense-making and perceptions of health and sustainability and how people themselves experience in/exclusion, in-depth semi-structured interviews will be held. To map the transition of migrants' food practices, a life histories approach will also be applied, with attention for cause and chronology of migration, its effect on food practices and in/exclusion dynamics. Finally, to overcome potential language barriers and to extend the notion of inclusiveness to methods as well, participatory visual research methods such as photo-voice or photo-elicitation will be used.

Theoretical framework

Accessing. Theoretically, the choice is made for the active phrasing of 'accessing' of healthy and sustain-able food rather than the more static term of 'ac-cess'. Inspired by practice theories, this study conceptualizes access as a dynamic concept, shaped by interactions with people's 'foodways' (Alkon et al., 2013), meanings, understandings: accessing happens in and through practices. Conceptualized in this way, accessing takes place at the consumption junction: where consumption and provision practices meet.

Inclusiveness. The main interest of this paper is not to evaluate the inclusiveness of a food system per se but rather to explore what exactly constitutes in/exclusion within food practices: perceived in/exclusion. The



Figure 1. *Afghan dinner with onion-based dish in Almere.*
Source: 'Ui in huis' project, Aeres University of Applied Sciences Almere.

study thus aims to understand primarily how people themselves perceive of in/exclusion and whether and how they mitigate it with what skills and competences. A deliberate conceptual choice is made for 'in/exclusion mechanism' rather than concentrating only on exclusion or inclusion, in order to appreciate the interactive and dy-namic nature of the issue and to leave space for people's own perceptions of in/exclusion: what do they highlight as in/exclusion and how do they cope? This approach may lead to new understandings of inclusiveness with regards to a sustainable and healthy food system.

Results

To be found – fieldwork will start in June. Some expected results: differences in health and sustaina-bility understandings and practices between different generations of migrants and different countries of origin; changing food environments result in changing food practices (accessing); in/exclusion experiences are related to (un)successful reroutinization.

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LAND FOR FOOD THE INTERACTION OF FOOD AND TERRITORIAL PLANNING IN THE CASE OF LUXEMBOURG REGION

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Abstract. *This paper responds to the recent challenges in urbanism and food systems by examining the role of food production in planning processes in the case of Luxembourg Region. The research is part of my PhD work which aims to demonstrate how the interaction of urban and architectural developments with regional food production can be translated into spatial models and land use planning for future developments of productive, agricultural land. Moreover, the research explores the questions of land control, ownership and land use. The methodological framework aims to overcome the limits and gaps in research by combining historical, spatial analysis and critical cartographic experimentation. By using land- use scenarios, the research will investigate how the integration of productive, agricultural land in the urban planning process can influence different scenarios on building density and typologies. The expected outcome will give recommendations for guidelines to assist in implementing food planning in future urban planning processes regarding the case study.*

Keywords – Regional food system, land use, land displacement, urbanization.

Introduction

Historically, the growth of cities was closely linked with the development of agriculture in their hinterlands, where surpluses of food led to the establishment of settlements that sprawled and became cities. Over the last century, this dependency has progressively disappeared, giving way to global food production and distribution systems and their inherent urban-rural dichotomy (Steel, 2008). This shift from Hinterland towards Hinterglobe has changed urban and rural configuration completely. Ultimately agricultural, productive land and regional food production are competing with a global food network of cultivation, processing, storage and distribution.

This paper responds to the recent challenges in urbanism and food systems by examining the role of food production in planning processes in the case of the Luxembourg Region. It critically revisits and deconstructs the concept of productive, agricultural land and its spatial consequences on urban and rural land. The hypothesis and research question is based on two major issues: the role of food production in architectural and urban planning processes (historically and currently) and which model/strategy would allow a better integration of food production in urban and regional development's (more prospective).

The paradox of Luxembourg

The research unfolds around an investigation of the urbanization landscape of the Greater Region of Luxembourg, aiming to unpack the extreme social and ecological asymmetries that characterize it: Luxembourg has been experiencing rapid economic growth, showcasing continuously one of the highest GDP per capita in the world. Annual economic growth rates in the range of 5% have been accompanied by a cumulative increase in population of more than 40% since the late 20th century and a more than 250% growth in cross-border commuters.

Although these trends are imposing huge pressures upon the landscape, agricultural land and forested areas still occupy more than 85% of the total area of the country, with no more than 10% covered by settlements and no more than 5% by infrastructural networks. The utilized agricultural area covers 54% of the territory, 47% of it is arable land.

This dominance of agricultural land doesn't find any reflection in the agricultural productivity: An estimate of 90% of food is being imported and 10% is produced locally, mainly in dairy and beef production. Luxembourg's agrarian activity entirely open to the common market of the EU, which is again increasingly open to the world market. The dependency on international markets will, with no doubt, continue to increase in the future.

The farmers themselves own less than half of the agricultural land. This renders the change in the use of land difficult. Furthermore, premiums per ha flow indirectly to the landlords via higher rents. Further, agricultural holdings are decreasing which is linked to factors of the lower income of farmers compared to compensatory payments in Luxembourg, the lack of availability of labour and the dependency on the allocated support (Rifken, 2016, Statec, 2018).

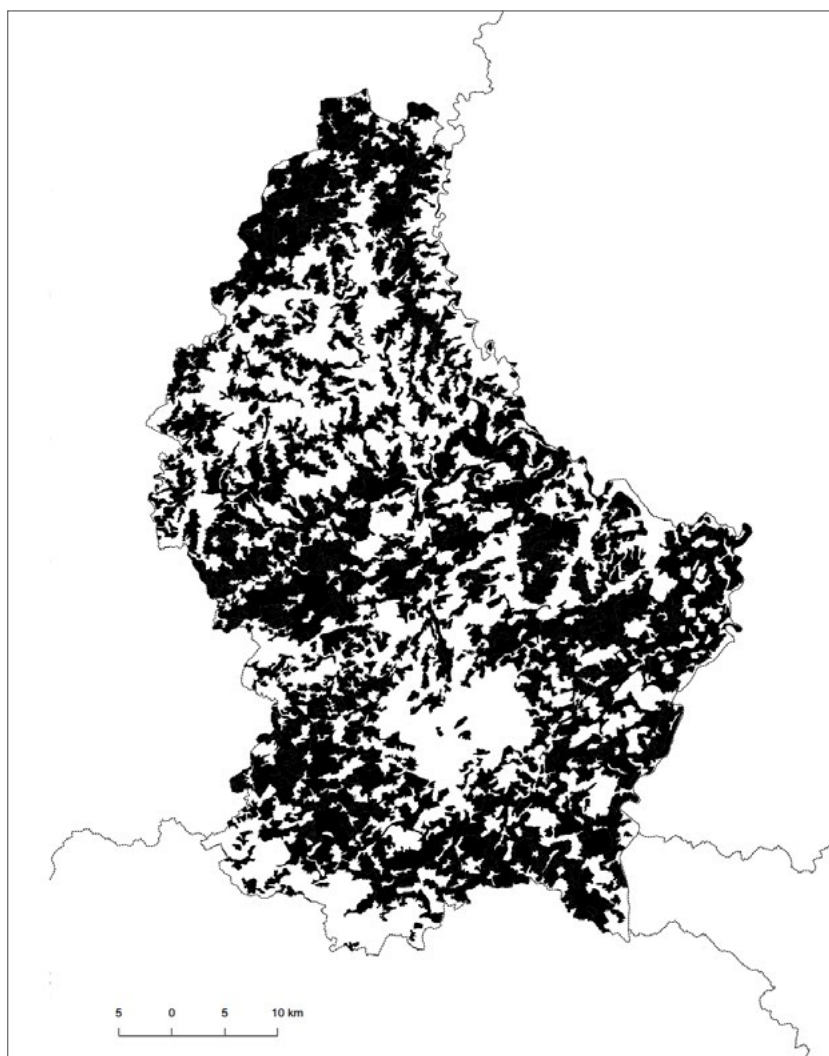


Figure 2. Agricultural Land in Luxembourg.

Source: Cartography and spatial analysis by the author based on data from Statistics portal of the Grand-Duchy of Luxembourg.

With forested and agricultural land excluded from development trajectories, Luxembourg is struggling to accommodate its annual economic growth without developing land at a similar pace. Increasing real estate transaction,

combined with the vision of conserving the “natural landscape”, are directly interconnected with highly problematic ecological performances of the region: The less land can be developed within Luxembourg, the more expansive the commuting belt becomes. Leading to a series of externalities, both social (increased cost of living, congestion), and ecological (CO2 emissions, energy consumption, pollution).

Luxembourg paradoxical condition in which the more “green” the landscape tries to be, the more it is offsetting social and ecological costs beyond boundaries, questioning the definition of the boundaries themselves, but also highlighting the need to develop alternative planning concepts.

Considering the need for developing agricultural land and the relatively insufficient quantity of food being produced in Luxembourg, the question of maintaining food production in the rural hinterland is arising. I therefore argue, that agricultural land should be part of the development trajectories to accommodate Luxembourg’s annual economic growth and to reduce social and ecological factors. While it is neither possible nor desirable to stop the urbanization process in Luxembourg’s Regions, alternative and sustainable food production methods need to be considered like urban and peri-urban agriculture.

Bringing food production back within the city limits this can potentially contribute mitigating environmental impacts of urban food systems (Lohrberg *et al.*, 2016, Benis and Ferrao, 2016).

The land use requirements varying between large peri-urban areas for cattle raising or production of cereals, oilseeds and pulses to small areas like urban gardens, backyards, vacant lots, rooftops or even indoors for horticultural crops. A very prominent method for growing vegetables in cities is Building- Integrated Agriculture which is claiming to be environmentally sustainable by reducing food miles (Specht *et al.*, 2014), minimizing land use and water consumption (Sanye-Mengual *et al.*, 2015) and improving yields (Despommier, 2013). According to a UN report from 2013, a transformation towards small-scale organic farming is recommended to feed the sprawling cities and regions. An estimated 15-20% of total global food production is currently grown in cities and communities.

This makes urban and peri-urban agriculture are crucial because today’s agricultural land will be developed into peri-urban and urban areas in future developments. But transforming agriculture land into peri-urban agriculture induces also high land prices for maintaining farming in Luxembourg. Ideally planning legislation should provide a framework to support that. By focussing on an alternative planning concept including regional food production in the architectural and urban design planning process, Luxembourg can make a sustainable contribution on an urban and territorial level.

These assumptions are currently being explored in my PhD research through a hybrid methodology of both historical research, spatial analysis and critical cartographic experimentation. Through speculative cartographies, the aim is to illuminate the radical transformation of land-use, infrastructure and ecology. A comparison with international best practice examples will unfold on an urban and regional scale, planning and legislation models from cross border regions like Genève and Singapore as well as on an architectural

scale of Building-Integrated Agriculture examples from the Netherlands and Singapore. The PhD project is aiming to define relevant planning and architectural models to apply in a prospective scenario for Luxembourg's region.

Conclusion

This research topic is discussing the challenges of spatial developments and regional food production in the case of Luxembourg Region. A territory which is facing major challenges regarding its intense pressure on land use, high demand for housing, overloaded transportation infrastructures and increasing sociospatial disparities.

This paper argues that agricultural land should be included in the development trajectories to accommodate its annual economic growth and to reduce social and ecological factors. Therefore, Luxembourg should develop an alternative planning strategy which integrates food production like urban and peri-urban agriculture in urban and regional development's.

Then by integrating food planning and regional food systems in the urban planning and design processes, the risk of losing vital habitat through expansion or conversion due to other uses than farmland will be lowered.

In reviewing the subject, it's also important to consider the potential new functions of existing urban open spaces and the principles of multi-functionality applied to urban landscapes, that can become a tactic to combat the specific challenges and demands of contemporary urbanisation, in terms of living space, services and food.

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FOOD PLANNING AND FOODSCAPE

MATERA AS A LABORATORY OF URBAN FOOD POLICY

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Abstract. *The city of Matera, “Capitale del mondo contadino” as Carlo Levi stated while describing the peasant nature of the city, and urban place of the Agrarian Reform’s project in XX century, tries to give a contribution to the debate on food culture and on city as a laboratory of ideas, but also for testing innovative agro-urban models of development. The proposed research, thanks to the project SMART Basilicata Culture and Tourism research, aims at supporting the setting-up of a Card of Food for Matera, to increase the importance of food system and its dynamics, to support the public administration on building a food policy and to improve the quality of urban and rural spaces. In this process is relevant the involvement of citizens and other actors and stakeholders of the system. The aim of the research is also to give value at the traditional knowledge as an education against food waste improving the local sobriety.*

Keywords – Food policy, Cultural Heritage, Creativity, Innovation.

Introduction

The interferences that food, city and territory have produced in the agro-urbanity debate, make a cross fertilization of ideas among different geographical contexts, affirming also a new role for urban system, in the light of renewed relationships between spaces of production, food supply chains and society. In this context, cities become spaces for mediation, places where the innovative development of territory is joined with the cultural dimension in order to increase the urban sharing. Food is proposed here as a link between various fields of study: urbanism, landscape, agriculture and anthropology (Mininni *et al.*, 2017).

This research will analyse the agro-urbanity dimension of the city of Matera, proposing the construction of a place-based strategy. The city is the keeper of the legacy of Agrarian Reform project of XX century, and it is also an extraordinary example of adaptation to territory and natural resources. Matera, “Capitale del mondo contadino” as Carlo Levi said while defining city’s peasant vocation, is proposed as an ideal place where rebuilding the link with agriculture that the city has removed too fast. However, the agriculture dimension was never entirely deleted from the local and urban culture. Today the city is proposed as a place where show off the whole Basilicata region, in the light of the near 2019 when Matera will be European Capital of Culture (Matera ECoC 2019); in this context the urban area could become the place where catalysing local and social resources of an unknown hinterland, a territory with excellent productive districts. Matera could become an urban laboratory for food culture by promoting and experimenting occasions for developing the territory with the aim to improve local food system by increasing the weight of local productive systems and food supply chains. The agro-urbanity came back to the city thanks to some events strongly connected to the renewed importance given to some relationship between tradition and innovation linked to the process of Matera ECoC 2019. The aim of these processes is added in the research project SMART Basilicata, which is a part of Matera ECoC 2019 and it is also organised as a policy to develop today and to consolidate as the event’s legacy. In this context the research

has the objective to study and apply innovative development models and strategies to increase the competitiveness of territory and food industry, through the enhancement of cultural heritage focusing on food, and to improve the awareness of citizens and consumers.

Methodology

The research will employ a specific methodology that provide the knowledge exchange about agro-urban practices, traditional food culture, producers and farms to build a strength base on which organize the development of the theme. This dialogue makes a discussion between actors and stakeholders of local food system and proposes the improvement of material and immaterial heritage. The aim of this process is the growth of innovation model to manage local food system enhanced by creative agro-industry, digital design and food policies. At first the research activity includes the development of a baseline studio on themes investigated with attention on national and international best practices. Alongside it will be increased the knowledge database of the analysed territorial system. For this purpose, will be made an analysis on: (I) mapping of excellent productive district at urban and regional level, with attention on the contribution of farms; (II) the identification and mapping of best practices in urban and periurban areas; (III) the investigation of methods used by producers to show off and market the local products. For implementing the research some data will be used to localize and measure agricultural holdings, on-line surveys will be addressed to actors and interview will be made to stakeholders. Major role to build the research is played by a mobility period at the University of Rennes (France), to make a review on literature and study the themes of food policy, and to increase the research on field deepening the study of local food policies. Another

Figure 1. *View of Matera from the Gravina.*

Source: picture taken by Michele Morelli





Figure 2. *La Martella, a rural village near Matera.*
Source: Picture taken by Vittoria Santarsiero.

important level of research activity is the traineeship in a local food company with the participation in the food design process in the factory's laboratories.

Expected results

The study of national and international food policies experiences and research results of Smart Basilicata (which proposes the construction of an Atlas of Food for Matera) are the support for the construction of the Card of Food for Matera. The aim of the research is to consider this document as a prototype supported by continuous updates to increase the visibility of Matera food system. The final hope is that the Card of Food will be accepted by the actors of the processes such as: (I) a tool to support the construction and implementation of food policy; (II) a strategy to increase awareness, participation and involvement of citizens, bringing value to traditional knowledge; (III) a tool to activate mechanisms of integration and cooperation between projects, initiatives and activities related to food.

The final objective is to give periodically results of the research through a continuous up-to-date report that can be viewed through open source maps. This format also permits the collection of the experiences of inhabitants and students mapping the initiatives that are in place to make the contents used and shared by the community. The multimedia platform will be run by experts; the dynamic nature and the continuous updating of content will ensure the emergence of clear results, that are based on needs and points of view expressed by community feedbacks.

Conclusions

Innovative informatic system will help to achieve an in-depth knowledge on the local food system. The Card of Food will be a virtual space, a place of comparison, analysis and design but also a powerful tool to transmit contents (Dansero, 2016). All the users of the web platform (producers, intermediates, consumers and technicians) will have the possibility to organize and to manage their helps to increase the research database, in the "Open view"

vision showed by the Matera ECoC 2019 Dossier. The study will also give the opportunity to deepen the relationship between food and city, food and landscape, food and open space, food and production, food and resources and, at least, food and society. This process will help the activation of food policies and projects in order to reconcile the links between producers and consumers and, consequently, between urban and rural spaces. Considering the increasing attention for the city and the planned activities for Matera ECoC 2019, the research will give a policy with the aim to propose a legacy for urban agenda, thanks to the possibility to extend all the efforts combined. In this way food policies will be connected to the agricultural production and to the territory.

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FOODSPACE CONFLICTS AND PARADOXES IN THE FOOD SYSTEM OF VENETO REGION

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Abstract. *In the field of food system studies, space and physical transformations analysis still need explorations and research methodologies. The tools of urbanism and territorial analysis (mapping, scenarios, micro-stories, visual representations) can be used to investigate and to describe spatial transformations related to the food supply chain. This paper presents the results of an application of such methods and tools in the case of Veneto region, in Northern Italy. This specific case is relevant for two reasons: on the one side, it well represents the characters of European disperse territories, a urban configuration that is relatively new in the food system studies; on the other side, it reveals unexpected conditions of those similar territories, where food production is an important economic sector, considered as “safe” from the food system point of view.*

Keywords – Veneto region, disperse territories, food supply chain, food urbanism, territorial analysis.

Introduction

At the beginning of the XXIst century the food issue still was a “stranger” to the planning field (Pothukuchi, Kaufman, 2000). Since then, planners and researchers have integrated the topic in their studies and explorations, contributing to the development of a specific branch in a discipline called Food Planning. However, food is still relatively new in the field of urbanism, discipline that uses to put in the centre of its approach space and spatial transformations. Food has largely demonstrated how is able to shape cities, processes and communities (Steel, 2008), and how it can be influenced by global transformations such as climate changes, demographic tendencies, economic conditions (FAO, 2014). For these reasons it is urgent, for urban scholars and designers, to deal with urban food flows as they have done before for water, mobility, energy and waste (Fresco, 2009).

Food planning developed starting from pioneer experiences of food strategies, focused mainly on dense metropolitan urban areas (Ilieva, 2016). The most famous and cited food strategies refer, in fact, to global cities and metropolis, such as London, New York, Toronto and Belo Horizonte (Morgan, 2010). Very few are the cases represented by disperse urban areas, where settlements and infrastructure are diffuse in rural tissue.

This paper resumes the results of my PhD research, that aimed to explore the case of Veneto region central area, through the lens of food system. The case study is a territory widely studied by urban planners and designers as the paradigm of European urban sprawl (Indovina, 2005; Munarin, Tosi, 2009; Viganò *et al.*, 2016), but never investigated from the food system point of view. The hypothesis considered in the research have been mainly two. The first one: food supply chain is a system capable to transform urban (and not only rural) spaces. The second one: despite the strong cultural and economic importance of food in Veneto region (and in Italy, in general), this territory is not so efficient nor so “safe”, in terms of food production and access, as we are used to think.

Conflicts, paradoxes and territorial responses

In order to verify these hypothesis, it has been necessary, at the beginning of the research, to understand how the food system of Veneto region works. Firstly, which resources, spaces, infrastructures, actors, and policies enter the system. Secondly, which dynamics and interrelations take place in the processes. Thirdly, which dysfunctions affect the system and which potentials the territory offers.

To do so, I considered a number of different sources: local and regional administrations; economic and social stakeholders; territorial associations; experts and scholars. This variety of “voices” has been crucial, in order to observe the regional food system from two different point of view: one from above, to understand how public decisions and large scale dynamics influence the system; one from the bottom, to observe how policies and practices interact and how this interaction modifies the territory.

These different sources gave me a heterogeneous corpus of information and data, that well describes the complexity of food system: GIS data; reports and articles; laws; bottom-up initiatives; best practices; personal stories. This various data set revealed that Veneto food system is characterised by dichotomies: pollutant and eco-compatible productions; industrial and traditional processes; large scale and small scale distributive systems; global and local supply chains.

These conflicts can be observed in many other similar territories, but the interaction between these general dichotomies and the physical dimension of the territory, generates specific paradoxes. I used the paradox as a key to read, to understand and to explain the functioning of Veneto region food system.

In order to reconstruct these paradoxes, very complex and generated by several elements and dynamics, I used an approach based on diverse methods: territorial analysis, mapping, interviews, storytelling, scenarios. These different tools allowed me to control the tension between large and small scale, that makes food systems so difficult to analyse and to describe.

Critical issues and traces of innovation

I identified four main paradoxes, related to the phases of supply chain: 1) production and processing; 2) logistic and distribution; 3) consumption and waste; 4) regulatory context.

The first paradox consists in the fact that agro-industrial production damages water and soil resources, needed for a high quality- and remunerative productions. The second paradox consists in the dominant use of large-scale organised distribution, despite a territorial configuration that could facilitate local supply chains and direct selling. The third paradox consists in the presence of food insecurity in a region where food deserts do not exist and where a remarkable amount of food is wasted every day. The fourth paradox consists in the absence of specific food planning tools, despite the economic and cultural importance of food in this region. These paradoxes have been represented through maps, schemes and technical drawings, in the continuous effort of “spatialising” every collected data.

The exploration of these paradoxes bring me to discover strengths of the territory and traces of social innovations, that represent a potential in the ambition of make this food system more resilient and sustainable.

Agro-food related economies are still remunerative, and have continued growing even in the years after the 2008 economic crisis. An increasing number of rural enterprises is converting their productive systems according to greening, multifunctionality and innovation programs of the European Community. Food related logistic system of Veneto region is one of the most specialised and leading in Europe. In Veneto region, alternative food networks, such as farmer's market, direct selling, ethic purchasing groups, persist and proliferate. Consumers are increasingly careful on the topics of food quality, food insecurity and food waste. In Veneto many enterprises have established themselves as innovative economic actors in waste management.

The paradoxes have been an effective tool to describe dysfunctions and to highlight potentials of this territory, giving a number of "portraits" of the its food system.

A specific case, a paradigmatic case

From the study of Veneto food system it emerges that this territory is not so safe, from the point of view of food supply: it depends (as many other European territories) on food import, underestimating the impact that climate change and global migrations could have in the next years. The research, however, underlines a number of potentials that can be pivotal, in the process of reversing inertial tendencies of existing food system.

The recognition of these potentials is the starting point to imagine a direction towards a more resilient and sustainable food system, that should be planned under the guide of the regional administration, and with the collaboration among different stakeholders.

Figure 1. *Paradox 1: Inside the regional administrative border (in black line), the areas with many quality productions (in shades of blue) and the fresh water spring (dotted pattern) are threatened by the risk of nitrates infiltration (in red) caused by agro-chemistry. The image also identify: the size of local food chain (large circle), as defined by the regional law; and the agro-food cluster (small circle) located in the area of Verona, as described by the Regional Territorial Plan.*

Source: *Elaboration by the author.*

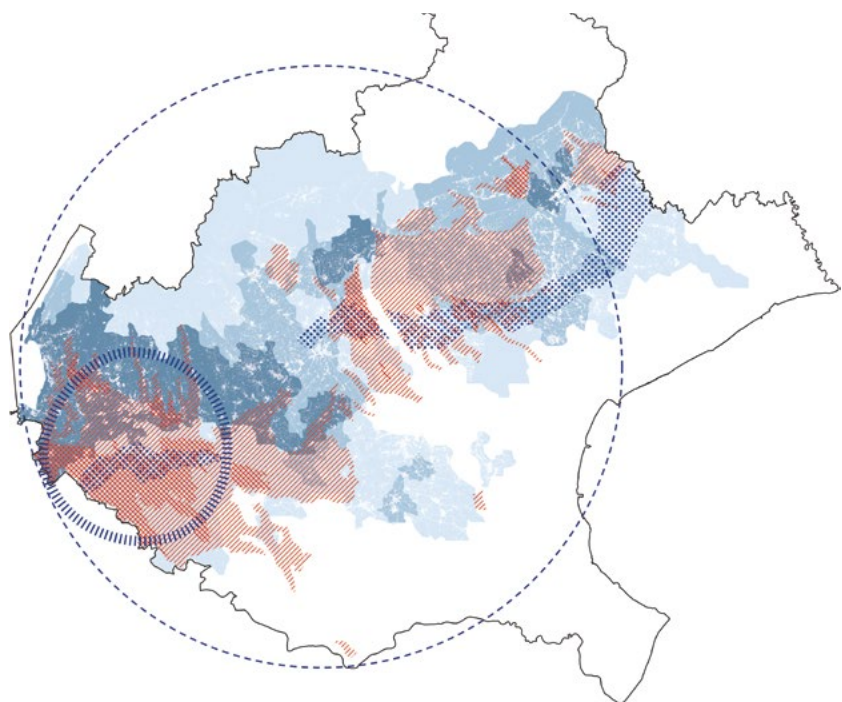




Figure 2. The “diffuse” farmer’s market: In the central area of Veneto region, the proximity between fields, factories, residential areas and working places, facilitates the access to fresh local food. Many local small producers sell their products directly to consumers, in small spaces inside the productive areas (in red). The diffuse settlement and the mixité of different functions allow this constant and direct exchange.
Source: Elaboration by the author.

In this sense, looking at other experiences and best practices would be useful. Even though the majority of food strategies refer to dense metropolitan areas, in Europe examples of food planning in low dense and disperse territories are rising, such as: the Wales food strategy, in Great Britain; the Dutch Food Security Policy, in the Netherlands; the Food Plan of Pisa, in Italy. In all these cases, the starting point has been the observation of the existing food system and its relation with local human activities.

This research can represent the base for further investigations and deeper analysis of Veneto food system, necessary step towards the development of a food planning tool. The research also proposes a new way to look at the food system, that is putting in the centre food space and spatial transformations related to food. The method of paradoxes identification and description can be used similarly in other territories and it is able to reveal unexpected geographies and specific (underestimated) dynamics. To visualise food system elements, processes and relations is crucial for urban planners and designers who want to put their expertise in the development of projects for the food space.

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FOOD NARRATIVES AND PLANNING SPACES IN MILAN CITY REGION

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Abstract. *The paper aims at analysing how food entered in the planning discourse of a Western City Region context. The chosen case study is Milan City Region (Italy) and, in particular, the Milan South Agricultural Park (PASM), taken as the relevant territorial administrative level in charge of dealing with periurban agriculture preservation and development at City-Region scale. A survey on planning tools and documents combined to a series of semi-structured interviews brought to investigate the role that food currently plays in planning processes. What emerges is a strong dualism between the dominant planning paradigm and other soft and non-statutory planning spaces, like those linked to Rural Districts. While the focus of the planning policy in force in PASM is merely oriented to control change and standardise behaviours through a harsh land-use regulation, Rural Districts have been able to develop forward thinking in local food systems by building alliances and alternative forms of spatial governance with a strong attitude towards urban/rural reciprocity.*

Keywords – Milan, Agricultural Park, City Region Food System

Introduction

The last two decades have seen planners recognising the social, economic and environmental opportunities of positively engaging with the food system. The ‘puzzling omission’ mentioned by Kevin Morgan in his seminal paper published in 2009 has been partially compensated by the increasing awareness that food belongs to the scope of urban planning and thus needs to be addressed through adequate policies and strategies (Morgan, 2009). According to Dubbeling (2013), today there is a need to better analyse the governance structures of urban food systems and to understand what are the concrete possibilities to integrate urban and peri-urban agriculture into planning policies.

Building on this observation, Renting *et al.* (2015) argue that the relevant scale for developing and implementing an integrated and comprehensive solution for a future-proof urban food system is the City-Region since it allows to integrate rural/urban linkages, planning and climate change adaptation at the territorial level. The city-region is defined in general terms by the presence of an urban core linked to its semi-urban and rural hinterland by functional ties (Rodríguez-Pose 2008). The consideration of governance processes is, according to Dansero *et al.* (2017), the crucial aspect making the City-Region Food System (CRFS) model the more fertile approach to describe the relational spaces of food. This aspect is also underlined by Reed *et al.* (2013) according to whom CRFSs disclose the relevant scale to gain a better understanding of the governance mechanisms able to increase the functional agri-food relations between cities and their rural hinterland.

The aim of this paper is to analyse a City-Region context, the Milanese one, to underline if and how food entered in the planning discourse and processes. The research focuses on Milan South Agricultural Park (PASM) and the decision making processes established by the Park Authority, taken as the relevant territorial administrative body in charge of dealing with agriculture preservation and development at City-Region scale.

Methodology

A survey on official planning tools and documents of the Park Authority has been carried out. This was combined with a series of semi-structured interviews addressed to a sample of local actors with a real or potential interest in the relationship between food and planning policy in the Park. The interviewees were local administrators, such as mayors and local councillors (n=8), planning officers (n=2), farmers (n=4), representatives of local associations (n=4), and researchers (n=2), for a total of 20 interviews. The survey took place from December 2017 to February 2018. The questions addressed to the interviewees had a common structure and aimed at understanding motivations, advantages and obstacles of integrating food in the current planning policy of the Park. Other questions were oriented at identifying possible trajectories to achieve this integration, particularly regarding the governance arrangements.

Discussion & Results

The findings from the survey and the interviews revealed a scarce integration of food in current planning policies. The Territorial Coordination Plan (PTC) of PASM, approved more than 15 years ago, makes no clear mention of food, because the focus is limited to agriculture, with most of the policies addressed to preserve farmland and to conform developments to rural settings. The topic of food enters, although quite marginally, in the section “Planning Guidelines” of the 3-year Strategic Plan of Milan Metropolitan Area (2016). By recognising the positive contribution of the Milanese territory in achieving urban/rural integration through food, the Plan highlights that the role of agriculture should be supported as a productive and social integration factor, by valorising the cooperation among the City of Milan and the neighbouring municipalities. According to the local administrators and planning officers interviewed, the absence of food in planning is due to the nature of PTC in force in the Park, whose rationality seeks to control change and regulate behaviours through a harsh land-use designation, rather than enabling new forces and forward thinking in local food systems. Hence, its emphasis on land-use regulation, more than preserving agricultural areas from urban developments, has over-looked the potential contribution of agriculture in answering to local food demands.

What has emerged from the survey is that the static role of the Park authority in planning has fostered, although indirectly, the emergence of a number of networks of citizens and farmers, kept together by the goal of carrying on positive forms of territorial management (Vescovi, 2015). Hence, in the last ten years, alongside the planning paradigm of the Park Authority, a number of soft and non-statutory planning spaces have emerged (Allmendinger *et al.*, 2015), such as the Rural Districts, whose have generated positive impacts on local food production and, more in general, in the practices of Milan food system.

A crucial example is the Milanese Agricultural District (DAM). Its Plan contains actions oriented to facilitate the marketing opportunities for local products and services, such as the development of local purchasing groups

(Consorzio DAM, 2011). DAM counts about 30 agricultural enterprises, most of which cultivate land and use buildings owned by Milan Municipality. Another interesting case is the District of Ethical Rural Economy (DESR) that, although not legally recognised as a District, has among its objectives the achievement of the food sovereignty in Milan City Region, a process that should be framed by new urban/rural relationships and by the reconsideration of non-monetary economic relationships. DAM and DESR share the common aspect of gathering together a variety of actors and interests, motivated to cooperate for achieving shared objectives. Although spatially overlapping with the Park Authority, these spaces do not establish any significant functional or social relationships with the government of PASM, because, as underlined by some of the interviewees, they perceive it as detached from their range of action and from their objective of “co-generating a rural-urban landscape”.

The Rural Districts are just one example of the food initiatives and networks extending in the area of PASM. Thus, just by looking from the side of marketing, we notice how the activity of the 5 Rural Districts currently active in PASM is sustained by a constellation of farmers’ markets, fair trade shops, bars and restaurants covering whole Milan hinterland which sell local food and whose number is constantly growing (Calori & Magarini, 2015).

Conclusion

The brief survey above has presented Milan City Region as a context characterised by a consolidated food narrative, evident from the variety of local food initiatives and networks as well as international mega-events (Expo2015) and their outstanding policy impacts (Milan Urban Food Policy Pact, 2015). Despite this, food is still largely outside the focus of planning policies. Little has been done to bridge the gap between practices and policies and re-orient statutory planning spaces towards addressing the sustainability of Milan CRFS.

Nevertheless, the debate about the identification of the appropriate policies to deal more effectively with food is still surprisingly lively (see among the many: Vescovi, 2015). According to the authors, PASM has the potential to be the relevant policy arena to address the issue of food in Milan City Region because of its territorial extension, comprising 61 municipalities for a total

On the left: A market in Cascina Cavriano (Milan).

On the right: Agricultural land of Cascina Basmetto (Milan).

Source: www.agricity.it



area of 46.000 ha, and the peculiar governance arrangement, gathering together representatives of local institutions and civil society.

A window of opportunity seems to open with the recent proposal launched by the Region Lombardy through Law 28/2016 to reorganise the system of regional and local parks. This proposal is likely to lead soon to the amalgamation of PASM with the other natural local parks belonging to the 8th Territorial Ecosystem (TE) matching with the area of Milan City Region. The importance of this lies in the reorganisation of the Parks' governance system and of their planning policies that this process would necessarily foster. This would also open up possibilities to include a food narrative in current planning processes. Here it is suggested that a positive contribution of PASM in building-up a strategy for a more sustainable CRFS could be facilitated by reinforcing the contribution of Rural Districts and local food networks to decision making processes of the Park Authority. Whereas amalgamating agricultural and nature-based parks would not worsen the current weaknesses of PASM, the strategy of integration would be accompanied by a set of policies and related actions for strengthening urban and peri-urban food production and short food supply chains. Hence, the ongoing policy transformations could lay the ground for rethinking the role of PASM towards interpreting it not as a stable planning construct but as a networked form of governance, as an actor positively engaging with food networks and initiatives.

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WHERE ARE THE POST-COMMUNIST ALLOTMENT GARDENS HEADING?

(FOCUS POINT ON THE CZECH REPUBLIC)

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Abstract. *This paper provides an excursion to the urban allotment gardens' specifics in a country located in the Central and Eastern Europe (CEE). The paper introduces briefly the key aspects of historical overview of allotments in former Czechoslovakia and defines significant periods which influenced urban gardening and the society in general. We capture the main characteristics prevailing in the communist regime and consequent changes after 1989, and we also discuss diverse aspects of its decline in the Czech Republic since then. Further, we indicate contemporary trends and challenges for the future of urban allotment gardening within the context of urban and food planning. In the post-communist development we revealed some significant aspects. Radical socio-economic changes after 1989 caused shrinkage of their significance in general. Consequently, the process of looking for their new position and the role in cities is taking place. New challenges for renovation of relation among food, gardening, urban planning and life in cities arise.*

Keywords – urban gardening, allotment gardens, Czech Republic

Introduction

Allotment gardens play a significant role for sustainable food planning in cities. They support individual urban gardening and food self-provisioning of urban inhabitants. Moreover, they provide various positive social, environmental, recreational, spatial and other functions for inhabitants and urban environment (Bell *et al.*, 2016; Tóth *et al.*, 2018; Ambrožová *et al.*, 2011). They are anchored within the urban agriculture typology as the example of urban gardening level, quite properly organised, in form of garden plot lease provided by the city council or private owner, where gardeners are usually gathered within some non-profit associations (Duží *et al.*, 2017; Simon-Rojo *et al.*, 2016).

In Czechoslovakia (split into the Czech Republic and Slovakia in 1993), the allotments were continually developed mainly since 19th century. Their appearance, area and distribution within cities were changed, and mostly consisted of interactions between people (bottom-up) and administration (top-down) (Ambrožová *et al.*, 2011).

This short contribution is a reworked and shortened version of the paper elaborated by Tóth *et al.* (2018). In this case, our attention focuses more on the context of the Czech Republic.

Methods

We adopt a socio-historical approach and start the study from the 18th century, with focus on the main changes after the collapse of communist regime after 1989. We aimed to depict the key aspects that influenced the development and changes of urban allotments.

Our methods consist mainly of literature review, which includes study of scientific papers and books, master plans, annual reports, statistical publications, professional magazines, acts and legislative documents and newspapers.

The literature review has been supported by applied field research in selected allotment gardens in Ostrava, Brno, Uherské Hradiště and Karlovy



Vary, conducted in 2016. The field research included 1) visual observation of allotments in general and photo documentation, and 2) additional narrative interviews with local stakeholders (representatives of the national gardener unions, their local, district and regional branches), in order to gain a better insight into the historical development, transformations in space and time, current situation, challenges and trends.

Here are two general research questions:

What does research on urban allotments in the Czech Republic add to existing knowledge in European context? How can instruments of urban planning help to support sustainable urban food planning?

Urban allotment garden in Brno

Source: Pictures taken by the authors

Results

In case of historical analysis of allotment gardens development, we identified six key periods:

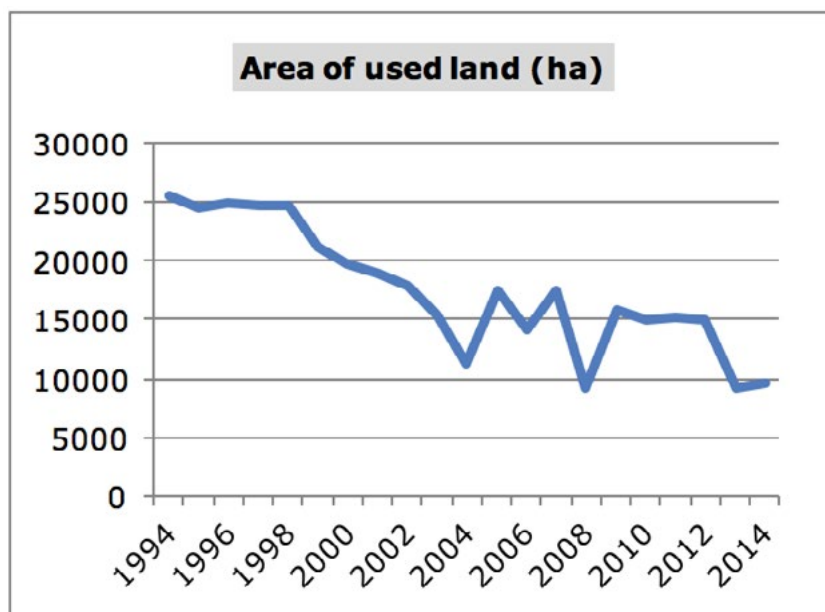
- I. 18th and 19th century: The first fruits of organised gardening and associational life;
- II. Early 20th century and the interwar period: Flourishing of civil societies and gardening associations;
- III. After 1948: Gardening as a tool of the communist regime influenced by the centrally planned development;
- IV. After 1975: Empowerment of allotments and their organised development;
- V. After 1989: The period of transition and breakup;
- VI. After 2000: Shrinking allotments, rising public engagement (for further historical details see Tóth *et al.*, 2018).

Year	1960	1979	1990/ 91	2014/ 2016
Members (CZ+SK)	101735	341218 ↑	623023 ↑	208934 ↓
Local branches (CZ+SK)	1734	5341 ↑	6975 ↑	3869 ↓

Table 1. The trend of members and number of local branches of Czech and Slovak Gardeners Union.

Source: Slovak Association of Gardeners (2016); Czech Union of Allotment and Leisure Gardeners (2016); Ambrožová *et al.* (2011).

Figure 1. Area used by allotment gardeners in Czech Republic.
Source: Czech Union of Allotment and Leisure Gardeners, 2016



The fourth period IV (1975-1989) was very interesting from the perspective of spatial planning. Allotment gardens were integrated into the urban planning process and functional master plans and were strongly supported by legislation at that time.

Especially locations unsuitable for agricultural mass production or construction were identified and allocated for allotments. These were set up with the help of gardeners, usually in the form of voluntary work called “Z action”. All gardeners had to be organized in Czechoslovak Union of Gardeners.

After the 1989, a set of radical socio-economical changes influenced the area and the importance of allotment gardens in cities as well. Many of them had to give way to new construction and changes of urban structures. Additionally, the urban inhabitants’ interest in gardening lost its strength due to changes in lifestyles and increased availability of fresh food in shops. Table 1 shows the declining trend of members and local branches of the Union.

On the other hand, food self-provisioning remained popular and socially inclusive activity among Czech urban dwellers (Vávra et al., in press). Since around 2000, new forms and types of gardens have been developing, such as community or educational gardens. Also, discussions about the future role of allotment gardens within master plans and the life of urban inhabitants take place, including attempts to approve the act on gardening. The rising public awareness on gardening, especially by the young generation is visible (for details see Tóth et al., 2018).

Discussion and conclusion

This paper provides a short excursion to the development of allotment gardening in one of the representative states of the CEE region. We point out the fact that the communist regime was quite supportive and protective towards allotment gardening, though in a rather top-down way. Nowadays, in the contemporary democratic context and due to the communist heritage,

municipalities still have strong instruments for supporting urban allotment gardening in towns and cities.

We argue that the current position of allotments in local and regional master plans needs to be strengthened, so that allotments do not represent only provisional and spare land for further development and construction. They need to acquire a full recognition as green and blue infrastructure components, providing a wide range of valuable ecosystem services to urban inhabitants. Municipalities have to recognise that allotment gardening is a valuable recreational resource for urban inhabitants, which can supplement sports centres, playgrounds and parks.

And finally, allotment gardens would also play an important role in thinking of local food system resilience and food security.

As the current chair of Gardeners' Union fittingly points out: imagine, where food would be produced if all urban green spaces were built up? What would we do if all achievements and privileges of the modern time collapsed? (interview with Stanislav Kozlík, 2016)

Acknowledgment

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THEORETICAL FRAMEWORKS FOR URBAN AGRICULTURE POLICIES SUPPORT: A LITERATURE REVIEW

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Abstract. *The impact related to an increasing urban population is challenging the urban food systems. Local government and international organization are trying to promote more sustainable and resilient forms of urban food supply including also urban agriculture (UA). The assessment of the main characteristics of the actors involved in UA could help decision makers in defining more targeted UA policies. The work presented in this paper aims at integrating the existing theoretical frameworks for the analysis of UA, starting from an empirical study conducted in Barcelona. The main outcome is that it is possible to integrate different theoretical approaches providing a more comprehensive support to the definition of UA empirical analysis and policies aiming at developing more context tailored UA strategies. Further analysis should further develop the proposed framework and empirically test it.*

Keywords – Urban Agriculture, Urban Food Provision, Food Sovereignty, Urban Resilience.

Introduction

Sustainable agricultural production through the implementation of locally based agricultural activities has been encouraged in the latest decades both in developing and developed countries. The positive impact of Urban Agriculture (UA) on the local community has been analysed from a sustainability point of view. UA can generate income and increase the access to safe and quality food, furthermore UA mitigates the effects of human activities on biodiversity in the urban environment and increase the resilience of urban food systems (Djalali & Virgilio, 2007; Mougeot, 2000; Orsini *et al.*, 2013; Barthel *et al.*, 2015; Camps-Calvet *et al.*, 2015; McPheason *et al.*, 2015). Despite the local authorities' involvement UA is still facing several critical situations regarding the relation between UA and metropolitan development (Djalali & Virgilio, 2007; Calvet-Mir *et al.*, 2016). UA-related conflicts usually concern abandoned buildings occupation and problems between local authorities and urban gardeners. Part of these issues can possibly derive from a lack of political guidelines and collective organization (Calvet-Mir *et al.*, 2016). A better knowledge of the stakeholders involved and the drivers that lead the creation of UA activities could help policy makers in defining better targeted UA policies. To this end part of the literature has focused its attention on motivations that influenced the adhesion to urban agriculture activities. The motivations to enter in UA varies depending on the context and the typology of activity in which individuals are involved. Several theoretical explanations have been developed or tested starting from Maslows's pyramid of needs and biophilia theory (Calvet-Mir *et al.*, 2016; Pourias *et al.*, 2016). What emerges is that UA is strictly related to several motivational frames like individual food provision satisfaction, educational purposes, relational aspects, political opposition, environment protection (Calvet-Mir *et al.*, 2016; Camps-Calvet *et al.*, 2016). Motivational frame also depend on the typologies of UA in which individuals are involved. A recent empirical work (Di Fiore & Zanasi, 2018) analysing the different motivational frames among and users' characteristics in three vegetable gardens of the most widespread UA typologies in Barcelona provided an interesting analytical framework. The

three typologies are: (*huertos comunitarios*) community based bottom-up initiatives; (*huertos municipales*) Top-down allotment gardens; (*Pla Buits*) requalification of abandoned spaces through UA associations.

By integrating the literature on the context of Barcelona (Reyes-Garcia *et al.*, 2012; Camps-Calvet *et al.*, 2016; Calvet-Mir *et al.*, 2016) 5 motivational categories were assessed:

- 1) *Personal wellbeing*
- 2) *Environmental*
- 3) *Relational*
- 4) *Transmission of Knowledge*
- 5) *Political*

A 6th category was designed to assess the importance of usability requirements (safety from theft, closeness, inputs availability).

The main result of the empirical analysis showed that users of more socially oriented vegetable gardens like *Pla Buits* and *huertos comunitarios* are influenced by relational, environmental, and political motivations; while individual plotted gardens' (*huertos municipales*) users are motivated by personal wellbeing motivations. Nonetheless the Barcelona analytical approach has some theoretical limitations regarding its capability to integrate the socio political context dimension. Furthermore, it does not relate the policy implication of the motivational frames assessment with UA's role in increasing food system resilience. To this end the present paper is trying to develop a broader theoretical framework to be implemented in future researches through the integration of different analytical approaches and methodologies coming from the literature review.

Methods

Literature review analysis of the main theoretical approaches used in the assessment of motivation in UA and its role in urban food system resilience. The analysis was focused on both empirical studies and literature review papers.

Results

The Barcelona case study approach has been integrated in a broader theoretical framework starting from the new frames emerged among UA users (McClintock & Simpson, 2017; Tiraieyari & Krauss, 2018). This framework connects motivations with the political and economical processes (McClintock & Simpson, 2017). Further aspects to be integrated in the theoretical framework development are those related with attitude towards UA and the role of significant others in encouraging adhesion to UA (Tiraieyari & Krauss, 2018).

A contribution to fill the gap between motivation assessment and the implication of UA in increasing the urban food system resilience can be provided by the Marxist theory of metabolic rift (McClintock, 2010). The three interrelated dimensions of metabolic rift (ecological, social and individual) could be overtaken through UA capacity to rescale the production from global to local level with a consequent de-commodification of food.

Reducing the gap between food production and consumption reduces the urban food system exposure to risk of social disorder in times of crisis consequently increasing its resilience (*ibidem*). A mutual relationship exists between urban food system resilience and the quantity and quality of urban Ecosystem Services like UA (Barthel *et al.*, 2015; Camps-Calvet *et al.*, 2015; McPheason *et al.*, 2015). Defining complex socio ecological system dynamics (McPheason *et al.*, 2015). To this end policies aiming at increasing urban food system resilience should aim at increasing UA participants by knowing their motivations.

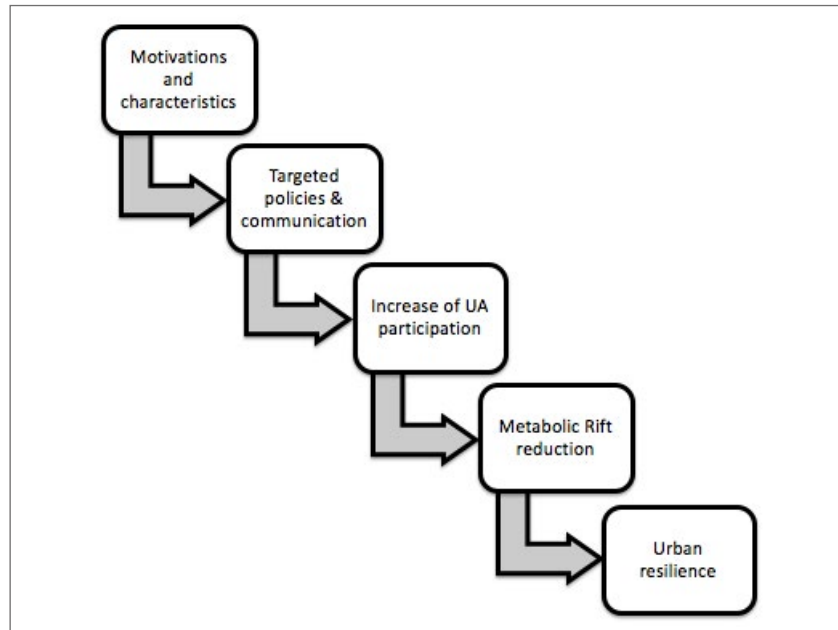


Figure 1. A possible framework towards UA policies' development.
Source: Elaboration by the authors

Discussion & Conclusion

The results allowed to define an analytical approach leading to a more complete theoretical framework for designing public policies enhancing the role of UA in increasing the resilience of urban food systems.

A better knowledge of the users' motivations can lead to better targeted policies aiming at increase the quality and quantity of UA activities. Communication strategies aiming at increasing the participation and urban food system resilience seems to be important especially for overpopulated developing countries' urban areas.

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FOOD DONATIONS PRACTICES IN ITALY AND IN THE VENETO REGION A FOCUS ON THE ACTORS INVOLVED FOR UNDERSTANDING THE STRUCTURE AND THE SPATIALITY OF EXISTENT NETWORKS

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Abstract. *Thanking to the long-lasting presence of charitable organisations, the practice of donating food before it becomes waste is nowadays established in Europe, counting on the partnership of many distribution companies. In recent years, the emerging new technologies, the reduction of welfare funds and law improvements are innovating the way food is recovered and redistributed and the actors involved in the process, resulting in a wide and differentiated range of practices. A reconstruction of the network of actors involved in Food Donations (FD) in the Veneto Region is proposed to study how FD practices are evolving. Direct and indirect case studies research and interviews are the tools used to reconstruct the network. The study permits to detect the work of thousands of volunteers, unveiling the territoriality of the phenomenon along with the different interactional structures that are on place. Further development of the research could lead to important suggestions for practitioners and researchers on how to maintain, strengthen and diffuse FD practices.*

Keywords – Food Donation Practices, Urban Metabolism, Territorial Networks.

Linking food losses and urban planning

Some level of surplus is desired for guaranteeing constant nutrition and thus food security, but in High Income Countries (HIC), the disequilibrium between nutritional needs and food surplus is too high to be justified with food security arguments. If a reasonable food supply including surplus should correspond to the 130% of nutritional needs, EU and USA countries have peaks of supplies that reach almost the 200% of nutritional needs (Papargy-ropoulou, 2014).

It is particularly on the undesired portion of food surplus that work has to be done to fight food waste, preventing by any mean the degradation of the unsold into waste; that is the reason why the present article is focusing on Food Losses. According to the definition of the High-Level Panel of Experts on Food Security and Nutrition, when food surplus is wasted there are Food Losses (FL), that are “a decrease, at all stages of the food chain prior to the consumer level, in mass, of food that was originally intended for human consumption”; differently, Food Waste (FW) is intended as “food [...] discarded [...] at a consumer level” (ibid.).

The proper scopes of territorial and urban planning intersect the phenomenon of FL in two major realms: Urban Metabolism and Sustainable Food Planning. Urban Metabolism studies the fluxes of input (resources) and output (waste) that sustain and define the “metabolic” activities of the territory. In order to obtain the maximum efficiency of the system what is pursued is the highest circularity of the same fluxes, reabsorbing the biggest quantity of wastes from a process as resources for another activity.

Food, being an essential resource for urban communities, has always been treated with special regard in Urban Metabolism (UM) literature, as shown by the large presence of the food issue in UM literature (Zhang 2015). It is so, that at the first international symposium on UM host-ed in Kobe, Japan, in 1993, Energy, Water and Food are the principal subjects of investigation.

Interestingly, in that occasion, the concept of Urban Food Metabolism (UFM) was coined and the need, within Urban Metabolism future research, to “systematically identify the conditions and mechanisms (political, economic, social, cultural, ecological) that contribute to urban food security or insecurity”, had been underlined as a key aspect for more sustainable and more efficient urban food systems (Bohle 1994). Despite the fact that the UFM concept has not been much in-depth explored by researchers, the study of food fluxes towards, within and out of the city and their implication with economy, society and the environment, got the attention of many: a specific niche of research arose from this ferment, collecting many authors and professionals around the concepts of “Sustainable Food Systems” (SFS). This newly diffused umbrella concept is powerful because it groups all researches that are working on sustainability implementation and planning on food subsystems, enlarging the space for interdisciplinary and intersectoral exchanges.

Why to map the food donation practices?

FD represents an extremely important option for FL reduction and probably the most sustainable from a “metabolic” point of view. The reformation of EU food aid program that followed the economic crisis of 2008 made adaptive changes mandatory for FD actors (Santini 2014), resulting in an on going development of food recovery and redistribution legislation and practices in European countries (Gheoldus 2014). Nowadays, the “Food Distribution Program for the Most Deprived Persons (MDP) of the Community” (in use since 1987) has been incorporated (2013) into the “Fund for European Aid to the Most Deprived (FEAD)”, thus limiting specific resources for FD organizations (Santini 2014). As a consequence of this, food assistance organizations cannot count so much on the Common Agriculture Program’s production stocks as before and are more dependent on private donation, especially from transformation and distribution firms. Interestingly, this change is the occasion for making the food system more efficient by reintroducing food surplus in the community metabolism, thus avoiding FL, helping the most deprived and reducing waste disposal costs.

Despite all this, the scientific literature on the argument is still rare and more research is needed to shed light on the FD’s dynamics and its potentialities for a more circular economy and more sustainable food systems.

On October 2017, the European Commission published the new Guidelines on Food Donation (EC 2017), delivering a new common frame for EU countries and specifically defining roles and objectives of the different actors implied in FD practices.

What is lacking is a complete understanding of all the actors that are playing an important role, locally, for reducing FL through FD. Only one work (Arcuri 2016), highlighted the local settlement of redistribution organizations, analysing the state of the art of food assistance in Tuscany. The author’s opinion is that such research should be repeated in every region of the country for reaching a national image of the phenomenon.

Method

The EU guidelines on FD give a simplified categorization of the actors involved in FD, identifying three major groups: the donor organisations, the receiver organisations and facilitator organisations.

The first step of the research consists in the adaptation of the EU guidelines' categorization to the Italian context, detailing with more precision the categories of actors that are found to act in Italy and especially in the Veneto Region. To do so, we re-elaborated the data of the many case studies collected by the 'Planning Climate Change Lab' within the CibOsservatorio - an academic observatory created to reflect on and widespread the concept of food strategy in the Italian context, providing examples of implementable initiatives to inspire planners, citizens and entrepreneurs.

To go one step further, the research proceeds with the aid of semi-structured interviews to representative actors for the identified categories (i.e. farmers, non-profit organisations, distributors, public administrations, ITC enterprises, and more...).

Results

The analysis of all the FD practices collected permits to go deeper in the classification proposed by the European Guidelines on FD, detailing the kind of actors involved in the analysed context. It is evident how many different entities are involved in the phenomenon. The network is reconstructed, individuating 11 sub-categories of Donor Organisations, 9 sub-categories of Receiver Organisations and 9 sub-categories of Facilitator Organisations. The emerging structure has been graphically transposed (Figure 1), for a more direct and effective communication.

The interviews have been addressed to a diversified sample of actors that are currently or potentially playing an innovative role in the Italian context:

- The kiwi producers of a Veneto's agricultural district.
- Two innovative Receiver Organisations.
- Three companies of the GDO.

Figure 1. Schematic reconstruction of the FD actors' network. Donor (yellow), Facilitator (green), Receiver (blue).
Source: Elaboration by the authors.



- Two locally promoted networks of mixed actors.
- The founders of 10 mobile applications for food redistribution in Europe.

These interviews, besides providing important quantitative and qualitative data, give significant sparks to the discussion on the success factors, the obstacles and the limits that characterise food surplus redistribution practices.

Conclusions

At the present stage, the study of the practices show that the success of FD lies on the strength of local networks and that the figure of the “network-actor” is emerging as a key facilitator in the redistribution process, a lot more than (or complementary to) ICT facilitators. It is perceived that dense (and rich) territories can tackle better the problem and that a higher territorial presence of civic engagement corresponds to a more effective food surplus redistribution. Further research is needed to clarify all these aspects.

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FOOD MARKET NETWORKS: BRIDGING LINKS BETWEEN THE CITY AND ITS HINTERLAND

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Abstract. *Urban purchasing choices may have impacts on the landscapes at the production site of goods. Urban food consumption shapes a city's hinterland. Markets can be understood as the bridging links between cities and its local, regional, national and global surroundings. These market structures, the involved actors (producers, processors, suppliers and disposers of food) and especially the relations between them are assumed to be essential when it comes to an understanding of the (re-)organization of urban-rural-alliances. In a first step, the relational structures of market networks within two small-sized cities are depicted with the quantitative methods of social network analysis (SNA). In a second step, a more qualitative approach is exploring the dynamics market networks by analysing market practices and configurations. The aim of the research is the identification of central as well as strategic relevant actors within the market networks and the underlying dynamics of the existing structures.*

Keywords – food systems, market networks, regional development

Introduction

Urban food consumption has major effects on biodiversity, environmental conditions and the scenery of rural areas. At the same time, there is a strong increase of complexity within the production, processing and the distribution of food. Local market actors are often tied to supra-regional and globalized production networks. As a result, municipal planning practitioners and politicians as well as civil-society actors are not considering local food markets to be a topic for the administrative level of a city (cf. POTHUKUCHI & KAUFMAN 2000; BRINKLEY 2013). At the same time, research shows that the existence of specific regional networks of stakeholders is improving the competitiveness of local companies and markets (cf. SLOANE & O'REILLY 2013). Several analysis about value chains of regional food production are highlighting specific regional networks to be a platform for shaping food markets (cf. FONTE 2013, MALLARD 2015, LE VELLEY & DUFEU 2016).

Market networks of local food systems

Markets are emerging through processes of exchange and interaction between involved actors (human and non-human entities as well as artefacts). Those exchange processes are shaped by the differing natures of the relationships and the action of the involved actors. Markets could be seen as social networks, which are built on the social, cultural and political embeddedness of its actors. Hence, it should be possible to depict distribution structures and markets with the quantitative approach of social network analysis (SNA) (BORGATTI et al. 2018). In addition, this paper is pointing out the aim of capturing markets in a more qualitative way, to show the dynamics behind the emergence of markets and their networks. One way of analysing these dynamics is to take a closer look at the different market practices of the market actors (KJELLBERG & HELGESSON 2007). Market practices are the concrete outcomes of the embeddedness of market actors in market networks (ARAUJO et al. 2007). Oftentimes, these practices reinforce with the outcome of specific business ideas, -models and -strategies of



the market actors (STORBACKA & NENONEN 2011). The aim is to analyse whether and to what extent these networks hold potential to shape local and regional food systems towards more sustainable urban-rural alliances. Furthermore it is assumed, that there are so called ‘spill-over’-effects from other market networks (e. g. tourism, the health sector, education etc.) and/or municipal and regional development processes to the local food market network and vice versa. On that basis, this would suggest that the topic of food production could be a leverage, triggering municipal- and regional development processes (BLOOM & HINRICHS 2011: 22). In order to scrutinize these issues, it is necessary to take a proper look at the individual actors, relations, practices and configurations involved within distribution channels of local food markets. The crucial dimension of analysing the networks and their dynamics are the existence of market relations between actors, their spatial embeddedness as well as their economic and social intensity.

Figure 1. *Farmers market in the city of leutkirch (DE).*

Source: City of Leutkirch (DE)

Methods

The analysed data was collected in form of a comparative case study. The investigation areas are two small cities (both approx. 22.000 inhabitants) located in south Germany, the city of Waldkirch and the city of Leutkirch. Within the research, the more descriptive approach of social network analysis (BORGATTI et al. 2018) is combined with a qualitative perspective, aiming at the dimensions of action and governance (FLICK et al. 2004). The data is based on 127 quantitative and/or qualitative interviews with actors of the local market networks (Leutkirch: 52 quantitative-qualitative, 20 quantitative; Waldkirch: 37 quantitative-qualitative, 18 quantitative). The interviewees are representatives of companies, which are professionally involved in processes of producing, processing, supplying and/or disposing/

utilizing food within the municipal boundaries. The research first concentrates on quantitative indicators of up- and downstream supply and demand relationships, identifying central and strategical relevant actors with the help of social network analysis (SNA). Second, there will be qualitative research on the actors' practices and configurations, with the aim of gathering findings about the underlying dynamics of food markets.

Findings

The research project is currently work in progress. At this point it is only possible to present some first results and derivations.

The quantitative analysis of the food market actors within both cities shows a huge number of existing market relationships between the regions (which were defined by the municipalities) and the cities. Slightly more than one quarter of the market relations stay inside the administrative borders of the two municipalities. Supra-regional suppliers are weakly present. This indicates that regional food market relations could be important triggers for the governance of food systems on local and regional levels. Sales relationships of local actors exist to a large part within the municipal boundaries, which underlines the assumption of existing local food market networks. The identification of central and strategic relevant actors within this networks is in progress. The current status shows that especially companies of artisanal food production (e. g. bakeries and butcheries) are important actors within the city's market networks.

There are very few direct sale relationships between local and regional farmers and local or regional consumers, companies of processing (e. g. food trade, etc.) and companies of distributing (e. g. supermarkets, etc.). The regionally and locally produced goods are taking various byways of industrial processing, whole sales and/or logistical structures, before returning to local supermarkets. Hence, it is likely that the specific local market relations are yielding high potentials to shape and (re-)organize food markets on a municipal/regional level.

Initial findings out of the qualitative data are showing certain forms of common market practices of the local market actors. First, there might be processes of commodification of regional relatedness, societal factors like dietary habits and propounded traditional quality. This affects the emergence of specific distribution channels. Second, there is strong evidence for intensive coopetition (cooperative competition) within local and regional food markets. The mere existence of other companies in the same sector is quite important for local market actors in order of not 'leaving the whole field' to supra-regional organized chain-store structures. And third, especially local and small-scaled food market actors are suffering from the steady growth of regulations within the food sector and within inner-city development processes (hygiene regulations, planning and construction laws, etc.). Some of the market actors perceive these developments as existential threads. From their point of view, it jeopardizes the individual and traditional quality of their products as well as their specific knowledge about manufacturing methods.

Even if it may not directly threaten their economic existence, it lowers the attractiveness for following generations to take over the businesses.

Conclusion

Food markets are a bridging link between the prevailing dichotomy of a consuming urbanity and a producing rurality. As the demonstrated findings show, there might be potential starting points rendering urban-rural food markets more sustainable. A deeper look at the quantitative analysis of the market networks in the cities and its distributing channels on municipal levels (looking for central and strategic relevant actors) is necessary and in progress. The subsequent qualitative analysis of practices and configurations should help to understand the dynamics behind the emergence of local and regional food markets. Therefore, in a next step, it is necessary to take a deeper look at the retrograde development of the markets and its actors within the past decades. The question will be, how did the market arrangements change over time? Are there technical innovations and/or economic and/or societal changes that shaped the food markets? Which entities have and/or had capacities to act and to initiate changes? Local and regional networks of urban, suburban and rural actors of food market networks and relationships between them, might be one of the keys to the creation of more sustainable city region food systems.

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EQUITABLE URBAN AGRICULTURE IN THE UNITED STATES A REVIEW OF RECENT LITERATURE

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Abstract. *Urban Agriculture in the North American United States has gained academic attention in the past decades, and is key to addressing equitable food security and food justice for the future of its burgeoning urban communities. Effective development and implementation of policies to foster this evolution remain in question.*

Keywords – Urban Agriculture, Food Security, Food Justice, Community, Planning, Policy.

Urban agriculture. The Present Future

While the cultivation of plants and produce in the urban environment has been a common practice, it has gained academic attention in the past decades in the fields of planning, social sciences, food security, food justice, and public policy as a focus of study for its potential social and economic contributions to the urban landscape (Hatchett et al., 2016; Horst et al., 2017; Meenar et al., 2017). The growing global and urban populations, perhaps, portend these prescient responses, as feeding these populations will require strategic planning from a firm foundation of understanding. Already, in North America, eighty-two percent of the population lives in urban areas (United Nations, 2014). And in the United States (US), communities, organizations, and businesses are implementing an array of agricultural applications within their cities, with one third of US farms located in metropolitan areas (Chumbler et al., 2015).

To better understand how urban agriculture (UA) and such practices can, or cannot, contribute to the complex functioning of the urban landscape, particularly in economically stressed neighborhoods where food security and food justice are lacking and inequitable, some of the current literature on the topic is explored here from these perspectives. For this research, twenty-two academic journal articles on current UA practices within the US in planning and related fields were selected for review.

Imminent necessity. Food Security, Food Deserts, and Food Justice

Food, along with water and shelter, is a necessity of life. The quality of food consumed is directly related to individual and community health, affecting long term social and economic strength. Yet, while there is an ample quantity of food in the US to feed the population, distribution remains uneven and food security, the reliable access to and availability of fresh food, ranges greatly related to income and location of residence. In 2016, almost 13 percent of the country was food insecure; more so, and most prevalently, in metropolitan areas and principle cities (Rabbitt et al., 2017).

This is then compounded in minority neighborhoods, where food scarcity is tied to proximity and availability of nutrient-dense food. These locations with fewer food or grocery stores per capita are considered ‘food deserts’, with a paucity of food that is rarely fresh (Sonnino, 2009). And as with all inequalities, these circumstances can contribute to perpetual and persistent patterns already in place, that exacerbate inequality over generations, influencing the whole of society in the long term.

Food justice addresses these issues, bringing “attention to disparities that exist throughout the food system, from production through distribution and consumption” (Horst et al., 2017). It focuses on the need for people to have food that is healthful and culturally meaningful, not merely as sustenance. One way this is being addressed is through the advocacy of UA to partially alleviate the economic hardship of purchasing food through the growing of fresh produce, aiming to encourage agency in place of insecurity.

Benefits and potentials. Yield, Community Values, and Interim Land Use

Yields for fresh produce are proportionally greater in smaller scale production, offering more potential from a small lot or rooftop than a large swath of land. This is accomplished through denser plantings that don’t require space for machinery, use of vertical space and trellises, and intercropping of varying fruits and vegetable to produce multiple harvests in just one growing season. This can result in a yield up to three times that of conventional growing, with such yields being regularly recorded in many cities, including New York, Philadelphia, and Oakland (Ackerman, 2011).

Participation in the cultivation of UA with a community or group encourages civic engagement, community organizing, and key social processes (Meenar et al., 2017). This can translate into a greater awareness of the natural environment, and, stronger skill sets in the economy. Efforts in Chicago to facilitate individual training in UA for income earning have shown positive results to these effects (Hatchett et al., 2015).

UA is also being employed as an interim land use, making productive, if only temporary, use of underutilized or vacant lots, providing several benefits for the value of a neighborhood. This often occurs through not for profit community based organizations working with local municipalities to establish policy to allow these lots to be leased for use by the community (Mendes et al., 2008). Meenar et al. (2017) highlights that this can have the positive effect in a poor neighborhood of increasing the surrounding property value in the first five years by over nine percent, lowering crime, and simultaneously improving the sense of community and place.

Figure 1. 462 Halsey Community Garden, Brooklyn, NY.
Source: United Nations Food Gardens.



Concluding challenges to longevity. Lack of Equity, Impermanence, Lack of Regulation

Conversely, privilege and exclusion have also deterred progress in community efforts to cultivate equitable use of vacant lots being used for urban agriculture. As Macias (2008) notes, “More critical research carried out on local food projects has found that, although many of them aspire to attain wide community participation, they often stumble in their efforts to include a diversity of people on the basis of income, education, and occupational status.” Community studies in Detroit showed a range of attitudes and perspectives towards UA, as a reflection of social diversity between different communities within the neighborhoods reviewed (Colasanti et al., 2012). And a study in Oakland reflects on the elitist and radical approaches to theories on UA to reveal the complex dichotomy that “contradictory processes of capitalism both create opportunities for UA and impose obstacles to its expansion” (McClintock, 2014). These and other studies suggest the need for further analysis at multiple scales.

Further analysis is also required to explore venues to developing an approach to UA that can last. Impermanence of available space, and lack of policy or regulation are the greatest impediments. One overriding question of importance is that of the extent to which UA can fulfil demand as a source of food. To answer this more research is required to assess the scope of its viability, which is currently being explored through advocacy from planners and local organizations in numerous cities (Colasanti et al., 2012). And while in numerous cities in the US, planners are beginning to work with food systems in their practice, “unanswered questions remain where policy, coordination, implementation and organizational capacity are concerned” (Mansfield & Mendes, 2013). Furthermore, regional food systems as integral infrastructure for sustainable longevity of food sources will need to be cultivated to fulfil the growing needs of these urban environments. Integrating city region food systems into planning practices poses the greatest potential for success. Therefore, anticipating and acting in response to the future expansion of the population, and the necessity to feed this population through the systematic and sustainable use of urban land, will need to be addressed further. For without regulations and policies in place, the full potential of UA for the equitable and long term distribution of its benefits cannot be realized.

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