

Article

Change Agents' Perspectives on Spatial–Relational Proximities and Urban Food Niches

Christina Gugerell *  and Marianne Penker 

Department of Economics and Social Sciences, University of Natural Resources and Life Sciences, Vienna, 1180 Vienna, Austria; marianne.penker@boku.ac.at

* Correspondence: christina.gugerell@boku.ac.at; Tel.: +43-1-47654-73117

Received: 31 January 2020; Accepted: 13 March 2020; Published: 17 March 2020



Abstract: Cities are breeding spaces for innovations in the agro-food sector with the potential to foster the development of local niche networks and a food sustainability transition. In this paper, we propose a conceptual framework for the context-related development of urban food niche organizations and their networks of change agents. With a qualitative analysis of three niche-establishing organizations and their networks, we address the lack of knowledge on spatial–relational dynamics shaping the development of niche organizations and their networks. The identified dynamics are structured along the connotations of geographic, cognitive, social and institutional proximity within the niche networks, to the dominant actors, rules, and practices of the urban food system's regime and to society. For each niche network, we defined a strategic orientation that might lead to a specific development path. Finally, we propose strategies on how cities may foster the development of niche organizations and their networks to highlight local opportunities of supporting a food system sustainability transition, i.e., increasing food literacy, enabling access to space, and engaging in networking.

Keywords: food niche networks; urban agro-food system; proximity; comparative case study analysis; sustainability transition; change agents

1. Introduction

The agro-food system, both locally and globally, is facing persistent systemic problems such as social inequalities, climate change, and resource depletion [1,2]. A sustainability transition is essential to address these problems [3]. Sustainability transitions are defined as “long-term, multi-dimensional and fundamental transformation processes through which established socio-technical systems shift to more sustainable modes of production and consumption” [4] (p. 956). Long-term, multi-dimensional, and sustaining innovations are the key to this transition [5,6]. Geels [7] stressed, in his keynote speech at the International Sustainability Transitions Conference in Ottawa in 2019, that the agro-food sector's sustainability transition has not gotten off to a running start, with its alternative innovations being not sufficiently established yet. Co-evolving food niches and trends seem to arise in a rather diffused, fuzzy, and inhomogeneous process [8]. Food niches develop and experiment with new rules and practices that deviate from those of the agro-food system's regime [9], i.e., the intensive, conventional, industrial agro-food sector and its associated mainstream rules and practices [10,11]. As it seems difficult for niches to get a food sustainability transition started, we wanted to scrutinize the barriers and dynamics shaping the niches' development paths.

As sustainability innovations often emerge from the local level, we focus on urban food niches that respond to the impacts of global sustainability problems on the local scale [12]. In this paper, we analyzed the context-related development paths of three niche organizations and their networks in the urban context of Vienna: an edible insect company, a zero-waste supermarket, and a community

supported agriculture (CSA). As their actors address the inadequacy of the agro-food sector by creating local level niches, we considered them as change agents (CAs) [13] that seek to play a significant role in “initiating, managing or implementing change” [14] (p. 131). The analyzed niche organizations and their networks of CAs serve as representative cases of their local food niches. We argue that establishing food niche networks are shaped by spatial and relational proximities and propose three different development paths.

Objectives and Relevance of the Study

Although publications concerning sustainability transitions in agriculture are increasing [6,15–19], only a few publications address agro-food systems [9,10,20–22] and much less address them in an urban context [23–25]. Even less publications focus on food niches in urban agro-food systems [5,12,26,27]. However, urban agro-food systems gain more attention with an unbroken trend of urbanization and a worldwide growing demand for the re-localization of the agro-food system [2]. Cities in different parts of the world have been increasingly acknowledged as experimentation places for niche innovations [28,29]. In order to develop sustainable urban food systems, the importance of local governance and the creation of local policies in favor of this development are growingly recognized [24,30,31]. We chose the city of Vienna in Austria as the location for our empirical study to shed light on the development of urban food niches. Thus, the territorial focus of our empirical study is Vienna as a case for similar cities in non-Anglophone Middle Europe, a rather underexposed context with regards to alternatives in food systems [32]. Vienna is a member of the Milan Urban Food Policy Pact (MUFPP) [33], an initiative driven by cities from all over the world aiming to foster the creation of sustainable urban food policies. Vienna, like many other cities of the 209 members of MUFPP, is working on an urban food strategy. This paper aimed to contribute insights on the barriers change agents face in Vienna and how overcoming those barriers might be better supported by the city of Vienna or similar cities in non-Anglophone Middle Europe.

In general, the field of sustainability transition would benefit from focusing on territorial embedding and deeper insights into socio-spatial relations of transition processes [34,35]. Connotations of proximity, in different contexts, have proven valuable to interpret spatial and relational dynamics among actors [36–39]. Currently, there is no framework that explains this spatial–relational interplay in the development of niches. With this study, we address this research gap. We contribute to the field of sustainability transitions by proposing how dimensions of spatial–relational proximities shape the development of food niche networks. Furthermore, we give insights on how urban governance could support food sustainability innovations and CAs actively involved in niche development. Hence, the following analytical question guides our discussion:

- How have spatial and relational dynamics shaped the development of food niche networks in Vienna?

This paper is structured as follows. We first briefly review the literature on context-related niche development and highlight the need for better understanding of the spatial–relational dynamics shaping food niche development (Section 2). In Section 3, we deal with the research design of the empirical case study. Then we describe the results identified and propose a framework conceptualizing the spatial–relational proximities shaping food niche networks (Section 4). A reflection on the framework and its relevance beyond the case study follows in Section 5. We end the paper with conclusions in Section 6.

2. Critical Reflections on Explanations of Context-Related Food Niche Development

As pointed out above, only a few publications address sustainability transitions in agro-food systems [9,10,20–22] and much less in an urban context [23–25], although publications concerning sustainability transitions in agriculture are increasing [6,15–19]. In this section, we tackle the literature analyzing and explaining context-related niche development in agro-food systems and beyond.

First, we reflect on niche development through the lens of the multi-level perspective (MLP) on socio-technical transitions. Then, we introduce literature, which further refines the understanding of niche development paths and stresses the necessity of better exploring the niches' embedding in their contextual settings. Finally, we explain why we would like to add a new perspective by developing a conceptual framework on the spatial–relational dynamics shaping niche development paths.

Rip and Kemp [40] introduced the framework of the MLP which became a prominent heuristic for transition studies in the field of energy, mobility, and others [41–43]. It claims that transitions arise through dynamic processes within and among three analytical levels: (1) niches, i.e., protected spaces where radical innovations arise; (2) socio-technical regimes, i.e., institutional structuring of existing systems, leading to path dependency and incremental change; and (3) an exogenous socio-technical landscape, i.e., the environment external to the regime [34], (e.g., demographic trends, political ideology, societal values, economic and technical backdrops of society) [44]. If landscape developments put pressure on the regime, cracks and tensions appear in the regime. These internal contradictions within the regime create windows of opportunity for niches to break through more widely [40] and allow for some change [28]. Niches that hold up the principles of sustainable production and consumption [9] have the potential to initiate this change.

A series of studies delved more deeply into the subject of niche development paths. Smith and Raven [45] dealt with niche empowerment through the adjustment of existing regimes. Niches attempt to “fit and conform” to the regime through the adoption and mainstreaming of dominant socio-technical practices. Alternatively, they attempt to “stretch and transform” the regime in affecting it and transmitting their practices to it. However, niches do not necessarily have to expand to have an impact. From a people-centered perspective, Geels [44] characterized niche actors as being guided by the hope that their innovation might be used at regime level or even replace the regime. Darnhofer et al. [8] point out how food niches might differ from MLP propositions. Some food niches might not have a clear transformative ambition and might rather operate autonomously outside of the regime than aiming to change the regime rules [8]. Vivero-Pol [18] elaborates that although food niches might aim for food justice, commons, and food sovereignty, they are not necessarily transformative and reformist towards the regime. In contrast, even if they stay small, they can initiate change through suggesting different pathways, perspectives, rules, and norms [46]. It is questionable if food niche actors always aim to develop their niches towards changing the regime, and if niches—be they small or big—can actually have an impact on the regime. In fact, pinpointing the impact of food niche activities on an emerging regime transition is challenging [8].

Scholars increasingly stress the importance of acknowledging the contextual embedding of niche development to better understand change processes in the agro-food sector and beyond. According to Darnhofer et al. [8], change processes in agro-food systems depend on social (e.g., cultural traditions) and spatial contexts. Especially in agro-food systems, the location and the spatial nature of farming are found to be relevant [47], as places play an essential role in building alternatives [48]. Though, MLP levels lack a spatial perspective, as their nature is not geographical. Spatial dynamics (i.e., the interplay between territorial and relational elements of space [2]) are often considered as passive background variables, so we lack an explanation of how they shape transitions [34]. Within transition processes, they might frame institutional dynamics, i.e., a system of cognitive, normative, and formal rules [49]. According to Fontes et al. [50], niches' relational spaces are characterized by their actors' (inter-)actions and depend on the niches' embedding in specific spatial and institutional settings. Local institutional coherences have received comparatively little attention so far [34]. We might learn from “proximity studies” that have been successfully applied in various fields, including food network analysis [51], by considering modes of spatial (i.e., geographical) and relational (i.e., social, organizational, institutional, cognitive) proximities [36–39]. Thus, we decided to add a new perspective to the development paths of niches and their interplay with broader spatial and relational dynamics. We highlight the importance of spatial–relational proximities in the development paths of locally based niche organizations and

their networks and give new insights into the context-specific pathways of niche networks in an urban context.

3. Materials and Methods

A comparative case study design was chosen to examine how spatial and relational dynamics have shaped the development paths of food niche organizations and their networks in Vienna.

3.1. Selection of Niche Organizations

For case study selection, we screened cases for Viennese food niches that explicitly state to improve the environmental and/or social performance of food production, processing retailing, and/or preparation compared with the current agro-food system's situation [52]. Supported by an online content analysis of websites, blogs, journal and newspaper articles, accessed from May until August 2018 via Google search engine, we identified a total of 13 niche types consisting of a total of 155 niche organizations. Geographically, the focus was on Vienna and Vienna's hinterland (outside the core urban area, however, with a primary economic orientation towards the city) [53]. Figure 1 shows the number of identified cases per year.

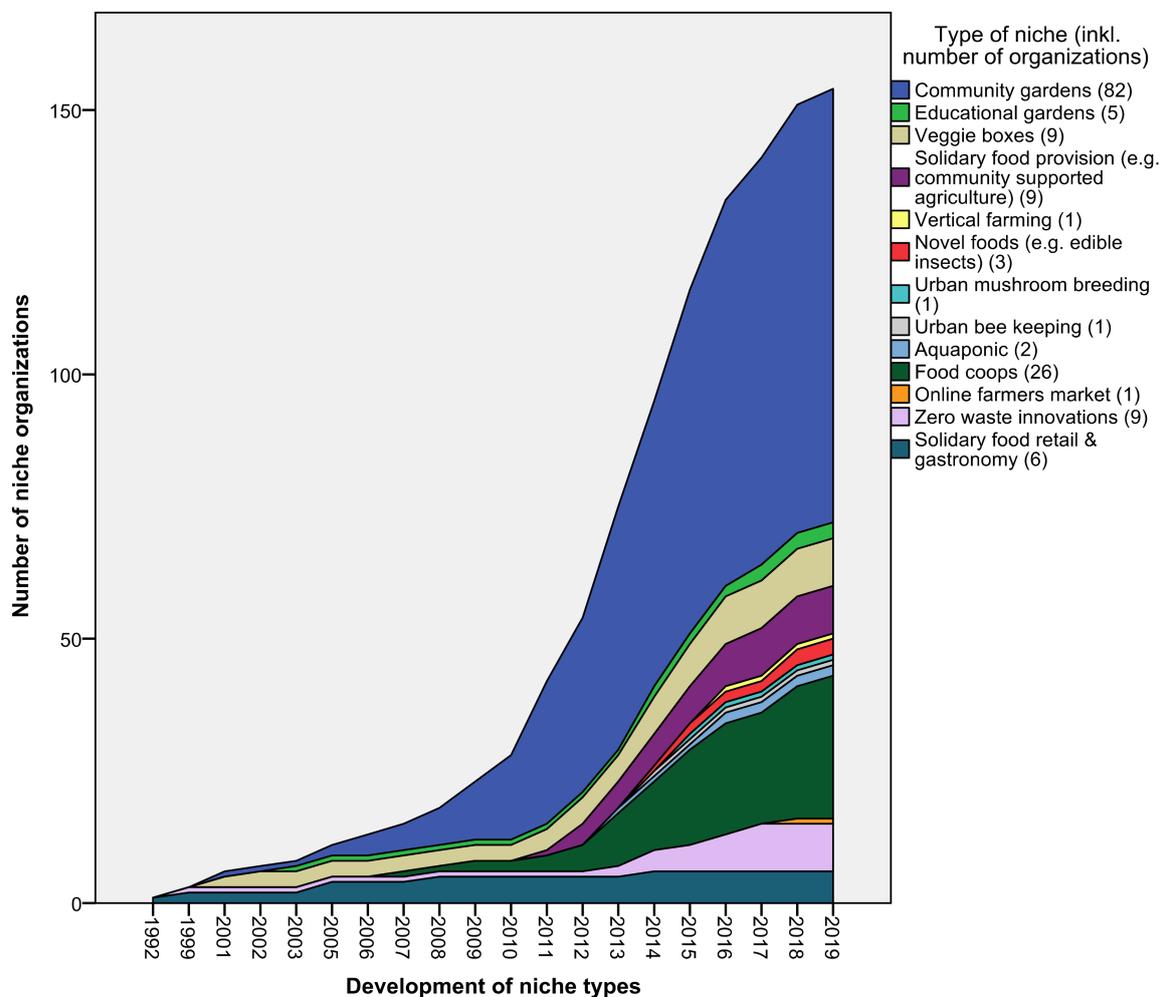


Figure 1. Identified types of food niches in Vienna and their development (own illustration).

In the next step, we preselected niche organizations based on the following criteria:

- Niche-establishing organizations that were maturing and starting to engage with the regime [8];
- Niche organizations that were the first ones to emerge within the niches to which they belonged;

- Niche organizations that had existed for multiple years (two or more);
- Niche organizations that seemed to address the criteria for niches to seek radical change and contribute to a transition towards sustainability (i.e., affecting the whole value chain, establishing rules and values that clearly differed from the regime, orientation towards a sustainability issue, seeking change that leads to a new alignment of actors, networks, and regimes) [8].

To evaluate Viennese food niches regarding their potential to contribute to a sustainability transition, we organized a focus group discussion. We invited representatives of Viennese niche and regime organizations, selected via purposive sampling, to cover actors from all stages of the food systems value chain. Seven representatives, affiliated with farming, food industry, retail, public food provision, NGOs, municipal authorities and universities, finally participated in the focus group. Based on the focus group discussion and the above criteria, we chose three niche organizations that covered diverse stages of the food value chain for comparison [54]: an edible insect company, a zero-waste supermarket, and a community-supported agriculture (CSA) operation. Studies have assessed the sustainability of CSA initiatives [55], zero-waste supermarkets [56], and edible insects [57] and identified environmental and/or social sustainability impacts. Table 1 gives an overview of the selected niche organizations, their networks, their objectives, and their sustainability orientation as stated by interviewees.

Table 1. Selected niche organizations (own illustration).

Niche Organizations	Edible Insect Company	Zero-Waste Supermarket	Community-Supported Agriculture (CSA)
Objectives	To market edible insects as a potential sustainable meat substitute	To sell food and non-food products without or in reusable packaging	To co-organize food production and distribution and to share risks among producers and consumers
Year of foundation	2015	2014	2011
Main focus in the value chain	Marketing	Retail	Production and Distribution
Internal members of organization	Founder	Founder Four employees	About 400 CSA members
Niche network	A (trans-) local network of niche and regime actors	A (trans-) local network of niche actors	A local network of niche actors
Sustainability orientation	Orientation towards a more environmentally sustainable alternative to meat consumption	Orientation towards reducing packaging and food waste	Orientation towards more socially and environmentally sustainable food provision

3.2. Data Collection in Interviews and Focus Groups

Based on sustainability transition literature centered on the MLP framework [39,41,44] as well as on literature especially concerned with the spatial and relational dynamics [2,9,46,47,49] of transitions, an interview guide was constructed. It was adapted to the specific positions of the change agents within the niche (i.e., leader, employee, cooperation partner, customer). The interviews addressed niche development, niche internal rules and values, barriers and opportunities of interactions within and among niche networks as well as with regime actors, societal, and political developments in Vienna and beyond, as well as barriers and opportunities of being located in Vienna. In all three cases, we first interviewed the founders of the niche organizations, followed by other actors (internal or external to the niche organization) that were identified as CAs within the niche networks by the previous interviewees. Upon the point of saturation in the data (i.e., additional interviews did not provide new information or themes), semi-structured interviews with 18 representatives of the selected three niche organizations and their networks were conducted (see Table 2). The interviews took between 45 and 90 minutes and were conducted either in the interviewees' homes, their workplaces or via phone. In the results (Section 4), we only indicate the position of the interviewed CAs (still maintaining the anonymity of the interview partners), if the triangulation of different interviewees' perspectives resulted in diverging observations [54]. Table 2 gives a brief description of the interviewed change agents.

Table 2. Selected interview partners (own illustration based on Van Poeck et al. [58]).

Change Agents (CA)	Position of Change Agent	Type of Change Agent
CA of edible insect company	Internal CA: Founder	Leader
	External CA: Mentor	Counselor, facilitator, and networker
	External CA: Business partner	Facilitator (marketing and business development)
	External CA: Business partner	Counselor and facilitator (founder of other novel food niche organizations)
	External CA: Supplier	Facilitator and expert (production and experimentation)
CA of zero-waste supermarket	External CA: Reseller	Facilitator (promotion and visibility)
	Internal CA: Founder	Leader
	Internal CA: Shop manager	Facilitator (organizational processes)
	External CA: Business partner	Counselor (strategy development)
	External CA: Supplier (food)	Facilitator (production processes)
CA of community-supported agriculture (CSA)	External CA: Supplier (non-food)	Facilitator and expert (production and experimentation)
	External CA: Regular customer	Concerned explorer (active engagement)
	Internal CA: Founder	Former leader
	Internal CA: CSA member	Leader: Representative consumer side
	Internal CA: CSA member	Leader: Representative producer side
CA of community-supported agriculture (CSA)	Internal CA: CSA member	Facilitator and expert (production processes)
	Internal CA: CSA member	Facilitator and expert (communication processes)
	External CA: CSA member (another CSA)	Counselor and facilitator (leading member of another cooperating CSA)

The interviews were carried out from August until December 2018. Regarding the scale of the niche network spaces, we differentiated the local (city of Vienna) from the trans-local scale (i.e., national and/or global). After each interview, post-analytical notes (memos) were written [59]. Memos helped to include general observations of the interview situation and each participant's experiences into the data collection. In addition to the interviews, we organized a second focus group (consisting of the same niche and regime representatives as in the first focus group), to get deeper insights on potential opportunities and barriers for the selected niche organizations and their networks within the Viennese food system.

3.3. Data Analysis Based on Deductive and Inductive Coding

We started data analysis with an inductive open coding [60]. This first step enabled the inclusion of all relevant elements derived from the interviews, focus groups, and the analytical notes.

Afterwards, we identified core categories for axial coding: (trans-)local spatial contexts, conditions internal and external to the niche, (trans-)local relational spaces (i.e., interactions) and strategies. By causing and relating these axial categories, we developed a conceptual framework of context-related development for establishing food niche organizations and their networks. Iteratively, literature was read throughout the research process. After a closer examination on the concept of proximity [36], we linked our research to proximity literature and could confirm the role of four proximity dimensions. We structured the identified spatial contexts along the connotations of geographic proximity, i.e., the physical distance among actors [36]. Niche conditions are represented by cognitive proximity, i.e., shared knowledge and expectations [36] within the niche organizations and their networks and with society as well as by institutional proximity, i.e., similarity to the rules, norms, and values within the niche organizations and their networks and to the regime level [37]. Interactions within the niche networks, between regime actors, and with society are structured along social proximity, i.e., social learning processes and trust-building [36]. In our three cases, we did not identify a major role of organizational proximity, i.e., the extent to which relationships are shared in a formal, organizational arrangement [34]. As the food niches analyzed are still in a phase of establishment [8], organizational proximity particularly between niche and regime actors seemed to be of less relevance.

4. Results: Proximities Shaping the Developments of Selected Niche Networks in Vienna

4.1. The Edible Insect Network

4.1.1. Past Development of the Edible Insect Company and its Network

In 2014, an association concerned with sustainable alternatives to meat consumption and a focus on edible insects was founded. Inspired by international niche actors, one of the founding members changed the association into a business company aiming to market edible insects, in 2015. Since other association members did not support this change, he was solely responsible for the company from then on. In its early days, the company's focus laid on organizing tastings or giving cooking classes. Through partnership building, mainly with international insect producers, the company first sold edible insect products to the gastronomy and to small food shops in 2016. At the time of the interviews, the one-man company worked together with a network of independent cooperation partners, involving advertisers, cooks, mentors, and producers located in Vienna and beyond. Over time, the niche organizations' initial goals and ambitions of transforming the meat industry faded into the background and profitability came into the focus. Despite concerns about possibly losing autonomy, stated by several interviewed CAs external to the company, it started to cooperate with one of the three biggest Austrian retail chains. After a period of negotiations and a rebranding, the retail chain sold the first edible insect products on a trial basis in 2018. In Vienna, the edible insect network is the only one of its kind so far.

4.1.2. Spatial–Relational Proximities Shaping the Development of the Edible Insect Company and Its Network

Geographic proximity: As several CAs observed urban people to be more open to eating edible insects than people from the countryside, Vienna is the preferred location for the edible insect company within Austria. However, space is rare and expensive in Vienna's (peri-)urban areas. When a cooperation partner stopped providing temporary space for storage, cooking, and information workshops, the company perceived extra economic stress. It had to outsource packaging, storage, and other work processes and to intensify partnerships with other local food start-ups and initiatives but also with financially stronger partners such as a mainstream retail chain.

The edible insect company is required to deliver a large amount of freeze-dried edible insects at a specific price and time to the collaborating retail chain and other resellers. There are no local edible insect producers, which would be able to meet these requirements. Two small-scale producers, located in Austria's rural areas, supply the company with a small amount of the edible insects it demands. Due to the lack of suitable producers in close geographic proximity, the company imports edible insects mainly from Dutch producers. However, the founder stressed a lack of transparency concerning production conditions of the latter.

Cognitive proximity: Expectations on the niche's future development are drifting apart within the network, and several CAs external to the edible insect company raised concerns about the company's transforming goals and ambitions. As there never existed a tradition of eating insects in Austria, several CAs concluded that many consumers are disgusted by the idea of eating full bodies of insects. This cultural barrier and Austrians' traditionalist tendencies are perceived as major barriers, a CA explained. The high (trans-)local media interest for the niche, as observed by a CA, helped to gain attention for edible insects. Nevertheless, the media sometimes also reflected negatively on edible insects, e.g., by highlighting disgust.

Social proximity: Experimentation with different edible insect products helped to gain knowledge on customers' demands and to develop strategies on how potential consumers could become more familiar with the consumption of edible insects. The creation of an attractive brand, through a colorful packaging design and funny wording, should raise the curiosity of potential customers and convince them to buy edible insects without previous tastings or face-to-face information. To make edible

insects accessible to a broader mass of people, there was the need to create products that also sell in more anonymous settings. Internationally successful brands served as role models for brand design. However, the packaging, which meets the requirements of a retail chain, did not transparently communicate production location and conditions.

Institutional proximity: The perspectives on the interactions with the retail chain differed. Some CA external of the company feared that the company might become too dependent on the retail chain and questioned the unilateral adaptation to the retailers' rules and practices, while others, including the founder, hoped to receive logistical and financial support for the further establishment of an internationally thriving edible insect market.

Although the EU legislation on novel food has allowed selling edible insects since January 2018 [61], Austria's Federal Ministry of Labour, Social Affairs, Health and Consumer Protection [62] still forbids the processing of edible insects. The company is in constant exchange with public organizations to promote legal change concerning edible insects.

4.1.3. Development Path towards an Adaptation to the Regime?

Several CAs wanted the edible insect company to expand quickly to become part of the mainstream. By focusing on marketing and branding as well as on the collaboration with established and powerful partners at an early stage, they hope to access a broader number of customers in an economically viable way. To fulfill their collaboration partners' requirements, the edible insect company was willing to abandon some of their initial goals and ambitions as well as to risk their autonomy, at least temporarily, as the company founder pointed out: "So it is really about giving up your soul; of course, with the chance to be in about a thousand stores and sell a hundred packs of insects every day." The edible insect company and its network are strategically orientated towards "economically establishing the niche organization by mainstreaming" and might develop towards an adaptation to the regime.

4.2. The Zero-Waste Network

4.2.1. Past Development of the Zero-Waste Supermarket and its Network

In 2014, the first zero-waste supermarket in German-speaking countries, using only reusable packaging, or preferably no packaging, opened in a central city location in Vienna. The founder was running the supermarket alone for a short period, but at the time of the interviews, a shop manager and three shop assistants also worked for the supermarket. The focus was on the expansion of the supermarket's assortment of (non-)food products and a continuous search for new suppliers which offer organic food and non-food products unpackaged or in reusable packaging. Over 60 mainly small-scale distributors, predominantly located in or close to Vienna, supply the supermarket. Furthermore, the local network consists of two other zero-waste supermarkets and a supportive and activist group of customers. Together with a business partner, the founder additionally develops zero-packaging solutions for potential collaborations with mainstream retailers in the future.

4.2.2. Spatial-Relational Proximities Shaping the Development of the Zero-Waste Supermarket and its Network

Geographic proximity: In addition to their loose collaborations with other zero-waste supermarkets in Vienna and in the rest of Austria, the zero-waste supermarket is part of a broader zero-waste grocery-shopping network in German-speaking countries. Being located in the urban context of Vienna is seen as a benefit, as the location of the zero-waste supermarket is close to citizen-customers and collaborations partners which are mainly located in Vienna's urban and peri-urban areas. Zero-waste shoppers often have to carry bulky and heavy reusable containers. Most customers live in the nearby neighborhood. Those who live farther away wish for geographically closer zero-waste shopping opportunities. However, because of the expensive urban space, opening additional stores is a risky

endeavor. The founder and her business partner stressed that collaborations with mainstream retailers could be a promising future step, as they operate stores within walking distance of most Viennese.

Cognitive proximity: Along with a continuously high interest from local and national media, consumers' demands for waste-related innovations have considerably grown and even reached mainstream retailers. However, these first regime activities (e.g., milk in disposable glass bottles) have been criticized as greenwashing strategies. Because of the high market concentration in the Austrian retail sector and the strong promotion of retailer brands, many customers are brand-bound. Buying unpackaged food unattributable to any brand would be unfamiliar for local customers. Furthermore, unpackaged food has to be weighed to calculate the price which is time-consuming. In order to build acceptance for unpacked food, the zero-waste supermarket has involved their customers in strategic planning and in the logistical optimization of the shopping process. To raise awareness for zero-waste shopping, actors of the zero-waste supermarket share their knowledge on social media channels, by giving talks, and organizing information events.

Social proximity: Through acting as a role model for other organizations and for society, the zero-waste supermarket pushes for change by building up a community that acts against packaging waste. Thereby, the zero-waste supermarket works in partnership with an Austrian network of about 11,000 zero-waste customers and activists that support zero-waste initiatives on a national scale. On a local scale, the supermarket interacts with their regular customers by actively integrating them into structural optimization processes of zero-waste shopping.

Institutional proximity: Next to logistical optimization and continuous experimentation with new zero-waste food and non-food products and packaging solutions, the supermarket's current focus is on realizing a new business idea in collaboration with scientists and industrial designers to spread the innovation to mainstream retailers. The vast amount of packaging and food waste in the retail sector motivated the founder of the zero-waste supermarket to experiment with alternative logistical packaging solutions for mainstream retailers. However, local administration hampers experimentation with zero-waste innovations. The lack of regulation (e.g., explicit hygienic rules permitting the sale of specific unpacked fresh food products) is seen as a challenge, as the supermarket still depends on the tolerance and goodwill of local regulatory authorities. Additionally, a CA pointed out that mainstream financial support is too hard to access and too time consuming for which to apply.

4.2.3. Development path towards affecting regime actors?

The zero-waste network has a transformative ambition: "Is the packaging industry really an opponent? Or do they have to rethink as well and would it be a potential partner too?" (business partner). Collaborating with regime actors on an equal footing is a conceivable ambition, as mainstream retailers have already picked up the zero-waste trend. Interviewees criticized activities of mainstream retailers as greenwashing or as potentially creating higher waste or energy impact. The zero-waste network's strategic orientation—"nudging regime actors by providing alternative solutions"—is hoped to lead to a development towards affecting the regime.

4.3. The CSA Network

4.3.1. Past Development of the CSA and its Network

The farm that later became the CSA is located in Vienna's peri-urban area. In a search for new farm models in 2011, the farm owner decided to change his profit-oriented model into a CSA model. It was the first of its kind in Vienna, consisting of a network of consumers and producers (i.e., CSA members), who co-organize food production and the distribution of the produce to more than 400 members via distribution sites and a veggie-box system. At the time of the interviews, the farm owner had just left the CSA due to the fact of insurmountable conflicts. As he claimed property rights for some of the farm's fields, the remaining CSA members tried to find solutions to prevent the CSA from closing. They established new rules for collective leadership and ownership. Through their members'

financial support, the CSA could buy the founder's fields and could continue to exist next to four other CSA initiatives in Vienna.

4.3.2. Spatial–Relational Proximities Shaping the Development of the CSA and its Network

Geographic proximity: Getting access to affordable and suitable land within Vienna's peri-urban area is a challenge for the CSA. While soil characteristics of fields, water availability, and climate conditions are no issue at this location, high sales or leasing prices for the rare agricultural land close to Vienna are observed as a barrier. The founder, who left the CSA, but remained owner of some fields, contributed to an internal crisis and made the CSA dependent on additional financing of its members to be able to buy the fields.

Efforts to create a national CSA network failed due to the limited time and financial resources. An international network organization for CSA initiatives exists, though the CSA focuses mainly on establishing a strong local network with their members, other local CSA initiatives, organic farmers, and food initiatives to share experiences and exchange products. The geographic distance within the local CSA network is small, as they consider face-to-face communication crucial for any CSA community. Being located close to Vienna is seen as locational advantage.

Cognitive proximity: Although several CAs considered customers in an urban area as potentially more open to the CSA idea, collective action, solidarity-based pre-financing of food production, and setting prices based on a self-appraisal were seen as the major barriers for mainstream costumers. The CSA's idea that CSA members should share economic risks with farmers is hard to imagine for outsiders. When the CSA was founded in 2011, food scandals (e.g., the exploitation of migrants working in the vegetable farms in Almeria, Spain) had increased the public demand for more sustainable food provision. However, the media attention on CSA, which was relatively high during the beginning, decreased over the past years. To raise awareness and a shared understanding of the CSA concept within the CSA community, the CSA organizes open days and information events and communicates via newsletter and social media.

Social proximity: CAs are aware of the high expectations of new CSA members to adapt to radically new ways of food purchasing and of taking financial risks. Open days, events, and communications tools facilitate the creation of trust within the CSA community.

The CSA representatives disagreed with dominant rules and food practices (e.g., capitalist price policy, greenwashing, lack of diversity) and perceive mainstream retailers as opponents and competitors, since they, too, started to increase the variety of organic and local fruits and vegetables. Hence, interactions with regime actors are rare or avoided. To develop an autonomous way of food provision, more established CSA initiatives in Germany and in the USA gave advice and acted as role models, especially during the founding phase of the CSA.

Institutional proximity: The CSA members explore alternatives to the dominant practices and rules of the regime, by questioning internal practices and experimenting with new rules of producer–consumer relationships, new organizational structures, as well as styles of management and leadership. The lack of visibility and a common representation of CSA on a local and national scale led to a lack of legal recognition of CSA initiatives in Austria, a CA stressed. The voluntary help of CSA members on CSA fields and distribution sites is not legally regulated and falls into a grey zone of labor law. In the interviews, concerns were raised that in the case the popularity and public awareness of CSA initiatives would grow, the government would probably implement laws impeding the continued existence of CSA initiatives.

4.3.3. Development Path towards a New Understanding of Food Provision?

The CSA operates relatively autonomous and somewhat isolated from others. It forms an "island" as an interviewed CSA member called it. The CSA and its network aim to stay independent of regime actors. "So, the idea behind it is that there are many, many small CSAs. And why small? Because for a CSA that functions well, the number of people must remain manageable" (CSA member). Although

recurrent internal crises have been challenging the CSA’s survival, the CSA and its densely webbed network has continued its mission to establish an entirely new understanding of rules and practices for a future (local) food provision. The strategic orientation of the CSA and its network might be best described as staying independent and small for context-specific autonomy” to develop towards a new understanding of food provision.

5. Comparative Analysis and Discussion

The comparative analysis of three establishing food niche organizations and their networks in Vienna shows how spatial–relational proximities shape their development embedded in the urban context of Vienna. In the following section, we present the conceptual framework that arose from our analysis, which is also used to present the results of the comparative analysis (see Table 3). The framework emerged from four major code groups which described (trans-)local spatial contexts, internal and external conditions, (trans-)local relational spaces, and strategic orientations of the niche organizations and their networks. The strategic orientations reflect on the interviewees’ aims, motivations, and values for the future development of their organizations and niches. In adding four dimensions of proximity to the analyzed data, we interpreted how possible future development paths of the niche organizations and their networks are shaped by spatial–relational proximities.

Table 3. Spatial–relational proximities and the development of urban food niche networks (own illustration).

Niche Networks	Edible Insect Network	Zero-Waste Network	Community Supported Agriculture (CSA) Network
Geographic proximity within network	(Trans-) local niche-regime relations	(Trans-) local niche relations	Local niche relations
to urban area	Preferring urban to rural area Access to affordable office and storage space	Preferring urban to rural area Access to affordable store space	Preferring urban to rural area Access to suitable and affordable farmland
Cognitive proximity within network	Diverging expectations	Shared expectations	Shared expectations
to society	Awareness-raising through marketing activities Ambiguous media attention Ambiguous discourse Cultural discrepancies	Awareness-raising through knowledge sharing Constant media attention Supporting discourse Cultural discrepancies	Awareness-raising through knowledge sharing within the CSA community Decreasing media attention Stagnating discourse Cultural discrepancies
Social proximity within network	Learning from role models	Being a role model	Learning from role models
to regime	Existing collaborations	Planning eye-to-eye level collaborations	Avoiding collaborations
to society	Lack of societal acceptance addressed by decreasing transparency and marketing	Lack of societal acceptance addressed by increasing transparency and shared learning pushing for societal change	Lack of societal acceptance addressed by trust-building and shared learning within the CSA community
Institutional proximity within network	Questioning the evolution of internal rules and practices	Increasing conformity of internal rules and practices	Questioning and adapting internal rules and practices
to regime	Pushing for legal change Adapting to dominant retail practices	Arranging in legal grey zone Translation of niche practices for regime	Lack of legal recognition Autonomous practices instead of institutionalization
	↕	↕	↕
Strategic orientation	Economically establishing the niche by mainstreaming	Nudging regime actors by providing alternative solutions	Staying independent and small for context-specific autonomy
Potential development path	Towards adapting to the regime?	Towards affecting the regime?	Towards a new understanding of food provision?

5.1. The Niche Cases Differences in Terms of Four Proximity Dimensions

Following the arguments of Coenen et al. [37] in the field of energy transition and referring to the literature on proximity and innovation [36], we structured the interplaying spatial–relational dynamics along four proximity dimensions.

Geographic proximity varied within the three niche organizations and their networks. The CSA network is mainly local, whereas the edible insect company and the zero-waste supermarket are embedded in trans-local networks. While the CSA and the zero-waste networks consist mainly of niche actors, the edible insect company interacts with regime actors. Though, building collaborations with regime actors is conceivable for the zero-waste network. Representatives of all three niche networks criticized Vienna for being too conservative and lagging behind other European cities. Nevertheless, Vienna, as Austria's largest city, was observed as the preferred location in Austria because of the geographical proximity to many critical citizen-consumers. The Viennese were considered as being more open-minded to innovations than other Austrians. Different dependencies arose from the urge to be located in an urban area. Getting access to limited affordable space was a challenge for the three niche organizations. For the edible insect and the zero-waste organization, access to affordable storage and shop place was an issue. For the food producing CSA, affordable access to bio-physically suitable farmland (e.g., suitable soil conditions for producing vegetables) was an indispensable prerequisite. As available land was suddenly reduced, the whole structure of the CSA started to shake. Still, the locational advantages of the urban context prevail. The geographic proximity to a large number of (potential) collaboration partners and customers was considered beneficial. This urban density made it easier for them to form local networks for exchanging experiences and to get in contact with other niche and regime actors. Our results are in line with Fuenfschilling et al. [63], Wolfram [64], and Wolfram and Frantzeskaki [30] who acknowledged the urban area as a melting pot for experimentation.

Cognitive proximity was highest for the zero-waste supermarket and its network. Internally, the supermarket and its network shared expectations of rules and practices and their plans for the future development of the niche. By sharing the knowledge with their (potential) customers via social media, in talks, and workshops, the zero-waste supermarket raises awareness among citizen-consumers. Additionally, the vast amount of food and packaging waste by regime actors and the high interest of media on that issue created a strong discourse on the prevention of food packaging within society. The CSA network raises awareness through knowledge sharing as well but focuses mainly on people related to the CSA community (i.e., members of CSA initiatives). While the interest of society and the media was quite high in the beginning, it decreased over time. Increasing cognitive distance characterizes the knowledge and expectation base of the edible insect company and its network. The approach to raise awareness shifted from face-to-face knowledge sharing to more distant marketing. The interest in eating insects within society is high, but discussed controversially, also by media. All three niche networks struggled with cultural settings which impede change and niche development.

Social proximity via face-to-face meetings and long-term trust-built interactions within the niche networks and with society was found to be crucial for the zero-waste network and the CSA network. The edible insect network tried to build-up trust rather through marketing strategies. Learning from trans-local role models was a motivation and an orientation for the development of all three niche innovations; the zero-waste supermarket became a role model itself for other local and trans-local actors interested in their innovation. While CAs within the zero-waste network emphasized transparency to increase trust, communicating the edible insects' origin more transparently was perceived as a challenge. Despite the trust-building efforts, convincing the local society of the positive value of their innovations and receiving social acceptance was a challenge for all three niche networks. In addition to their relations to (potential) customers, niche networks focused on their interactions with (potential) collaboration partners. The relations to regime actors, mainly from the retail sector and the local authorities, and their reactions to innovations were especially ambiguous and challenging. While the edible insect company built-up direct collaborations with regime actors, they were still missing in the case of the zero-waste supermarket, though CAs within the zero-waste network worked on possible

future solutions for reduced packaging in mainstream supermarkets. Simultaneously—without direct interaction with the zero-waste supermarket—a mainstream retail chain already introduced zero-waste filling stations in selected stores. This might have raised the pressure to reduce packaging for other mainstream retail chains. There were hardly any relations with regime actors of Vienna's agro-food system in the CSA case; they were rather avoided. However, the CSA had built-up strong relations with other local niche actors. To spread the innovation, CSA actors aimed to build a local network of CSA initiatives in Vienna. Coenen et al. [18] recognized the importance of social networks for niches which are stimulated by high trust arrangements and short geographical distances (i.e., geographic proximity).

Several interviewees of the edible insect network questioned internal practices and rules, due to the lack of economic viability. Therefore, CAs within the edible insect network focused on increasing institutional proximity to internationally successful companies. The edible insect company's lack of transparent communication and the orientation of their marketing strategy seem to become closer to the practices of the collaborating retail chain. Although the CSA network strongly questioned its internal practices and rules, it tried to adapt them without orientating on regime actors to avoid institutionalization. The CSA and its network aimed to break completely new ground towards a new understanding of food provision, utterly different from the current one. In contrast, the zero-waste supermarket and its network tried to reach internal conformity of their evolving rules and practices through sharing knowledge and learning processes within their network and with broader society. Laws were perceived as an innovation barrier for CAs of all three niche networks. They observed regulators and authorities as rather unsupportive and conservative. Instead of sustainability innovations, they would rather privilege technological innovations by regime actors. Pushing legal change is especially of interest for the edible insect company and its network. The participation in a working group on insects as food or feed seemed to be an opportunity to foster the implementation of national laws in favor of edible insects. Missing hygiene standards for unpackaged food and the lack of regulations for work conditions within the CSA could be a future hurdle for the niche networks. However, the implementation of new laws must not necessarily be beneficial for the niche networks but could also become a future challenge, when legal change—possibly driven by niche opponents – might create new barriers.

5.2. Development Paths of the Niche Organizations and Their Networks

An orientation towards the regime appeared in two of the three niche networks. While the edible insect network already collaborated with regime actors to become economically more viable, the zero-waste network preferred to stay economically independent but nudged current practices and rules of regime actors (e.g., consultancy offer). In contrast, the CSA network rather avoided relations with regime actors such as authorities or supermarkets. In general, it is still much too early to assess if the three niche organizations and their networks have the potential to contribute to a sustainability transition of the regime. Some of our results are in line with the niche empowerment strategies of Smith and Raven [45]. The edible insect network aims to economically establish the niche through mainstreaming by adapting to the regime, despite some concerns. As the analyzed edible insect case is still undergoing a development process, it might be too early to subsume it into Smith and Raven's [45] category of "fit and conform" with the regime. The zero-waste network's strategic orientation of "nudging regime actors by providing alternative solutions" could have the potential to "stretch and transform" parts of the local regime in the future. Currently, these developments are not yet foreseeable. A surprising finding of this study that adds a new perspective to Smith and Raven's [45] categories is the possible development path of the CSA network. Although or because it fundamentally differs from the dominant regime practices and aims to remain autonomous, it displays a transformative ambition. The CSA initiatives recognize insuperable obstacles for collaboration with the regime (e.g., prize policy) and offer a new way of understanding and organizing food provision, namely, via a loose network of decentralized and autonomous small-scale solidarity organizations. Their aspiration is in line with the argument of Brunori et al. [46], that niches could have an impact by providing

new perspectives, even though they stay small and independent from the regime. This proposes a new alternative to niche empowerment towards a sustainability transition: staying independent but offering a new understanding of how a transformed food provision could function. In contrast to Darnhofer et al. [8] and El Bilali [20], who argued that niches oriented on staying autonomous and on food justice, commons, and food sovereignty do not necessarily aim for a transition, the CSA network wants both transition and autonomy.

We identified three potential development directions regarding the strategic orientation of the niche networks, which are visualized through the different development arrows towards the regime-level in Table 3. The edible insect network might develop towards the current regime and adapt its rules and practices, visualized by a looping arrow that points from the regime-level to the adopting niche network. Instead, the zero-waste network tries to address the regime's practices and rules and nudges regime actors by providing alternative solutions (symbolized by an arrow in Table 3 spreading out towards the regime). In the case of the CSA network, the development path might be parallel to the regime, showing that they—in parallel and without regime interaction—work on a radically new understanding of an alternative system.

As the three niche cases are still in the phase of establishment, pinpointing the impact of their actors' activities to an emerging transition is challenging. In fact, more time is needed to better understand the niches' transformative power. Until now, we see the challenge in navigating between becoming too similar to the regime and too different from the regime:

- Too similar: edible insect network adapting maybe too early to regime rules and practices before being able to establish alternatives consumer values and network alignments pushing for major change;
- Too different: CSA network advocating changes too radical for scaling them up to a critical mass of consumers or challenging dominant practices of regime actors.

In order to ensure that their innovations are sustained, scaled up, and are not simply captured by regime actors, the niche networks could learn from each other. The edible insect network's early interaction with powerful regime actors put pressure on their ambitious sustainability goals. They had to make compromises due to the power differences and dependency. Intensifying the collaborations with change agents within protected niches and focusing on establishing and out-scaling their innovation among citizen-consumers and other similar bottom-up initiatives first could have prevented these risks. While the edible insect network might have opened up too early towards retailers, the zero-waste network was aware that powerful retailers could possibly capture zero-waste strategies. Therefore, they focused on the provision of services mainstream retailers can hardly compete with, i.e., well-educated personnel specialized on selling zero-waste products, transparent communication and involvement of costumers into strategy building, flexibility of adapting internal processes towards costumers needs, personalized services, and shopping experiences based on social interaction. While, the zero-waste supermarket will consider interaction with regime actors in the future, the CSA categorically avoids regime interaction to benefit from the protected space they created outside of market forces. In this protected space, they can experiment with radical new approaches, such as risk sharing between consumers and producers and new actor and network alignments, independently from the regime. Here, the future will show, if these radical innovations can develop into an alternative food provision model that can be accepted and adopted by a critical mass of citizen-consumers. If yes, it could become an alternative model of food provision without the need for regime interactions (with the development path of Hansalim [65], the CSA model in South Korea).

6. Conclusions and Policy Implications

In this paper, we addressed the knowledge gap on spatial-relational dynamics of sustainability transition [34,35]. We traced the pathways of three establishing niche organizations and their networks within the local context of Vienna's agro-food system. Our analysis confirms that the niche networks

embedding in specific spatial, social, cognitive, and institutional proximities shapes their developments and leads to different strategic orientations. Our conceptual framework was based on case studies in one particular urban agro-food system. This localization was a limitation of our study that points to the importance of future cross-country comparative research. The framework presented might provide the conceptual language for a comparative analysis on spatial-relational dynamics shaping one selected food niche across various cities and contexts. This especially calls for further cross-country research on the context-related development of CSA and zero-waste supermarkets that are establishing with different strategies for regime interaction. Furthermore, research is needed with regard to citizen-consumers' demands for change which was not a focus of our empirical research.

The framework can also serve as an orientation for local authorities within the context of the Milan Urban Food Policy Pact (MUFPP) [33], an initiative driven by cities from all over the world aiming to foster the creation of sustainable urban food policies. We identified several barriers to the development of the three niche networks within Vienna's agro-food system. Although we found that trans-local dynamics shape the development of niche networks as well, we argue that local authorities can adopt an active, guiding, and coordinating role to foster and accelerate a sustainability transition process on the local scale. There are a number of governance interventions to support institutional proximity. The current legal situation and the lack of legal-administrative flexibility and support were identified as major challenges across the three niche organizations and their networks. Specific sustainability innovation funds could help. For more institutional proximity (i.e., legal change in favor of sustainability transition), CAs need to be able to participate in political dialogue at the city level. Food policy councils are organizational innovations enhancing participatory decision making and effective policy implementation in cities such as Toronto, New York and Chicago [30]. A new food policy council was founded in Vienna in 2019.

In terms of geographical proximity, cities could create food innovation maps. Together with local researchers, local authorities could "identify, map and evaluate local initiatives and civil society food movements in order to transform best practices into relevant programmes and policies . . ." [66] (pp. 22f.). The limited availability of affordable and appropriate space for food production, processing, and storing is a particular challenge in cities. Local authorities could foster (temporary) access to land for food production or market space that link citizen-consumers to food niches. Cities could improve and expand food-related infrastructure (e.g., urban gardening areas, food hubs, market spaces) as suggested by the MUFPP [66].

Although cities are valued for the geographical proximity to a critical mass of concerned citizen-consumers, cognitive and social proximity, such as (trans-)local cultural settings and the lack of societal acceptance for innovations are still a shared challenge niche networks face. Apart from the power of media to raise awareness, the promotion of niche innovations by local authorities through targeted food sustainability events and campaigns could contribute to the visibility of niches and the support of cultural change. Local authorities could promote food literacy in public schools, kindergartens, and hospitals [66]. Finally, the creation of (trans-)local networks turned out to be especially fruitful for the development of the three niche networks. In line with the MUFPP, we recommend local authorities and change agents to participate in these networks and to build mutually beneficial learning and exchange between food practitioners, regulators, and society.

Author Contributions: Conceptualization, methodology, data collection and analysis, writing—original draft preparation; visualization by C.G. Conceptualization, methodology, writing—review and editing, supervision, project administration, and funding acquisition by M.P. All authors have read and agreed to the published version of the manuscript.

Funding: This work was supported by the Vienna Science and Technology Fund (ESR17042), Vienna, Austria. BOKU Vienna Open Access Publishing Fund supported the open access publication.

Acknowledgments: The authors thank all interview and focus group participants for the enthusiastic participation and patience. Without them this research would not have been possible. We are particularly grateful for Christina Roder's editing support and for the feedback from Hanna Edelmann.

Conflicts of Interest: The authors declare no conflict of interest.

References

1. Matthijs, E.; Nevens, F.; Vandebroek, P. *Transition to a sustainable agro-food system in Flanders: A system analysis*; Flemish Environment Agency (MIRA-AMS): Aalst, Belgium, 2012.
2. Fonte, M. Food consumption as social practice: Solitary purchasing groups in Rome. *J. Rural Stud.* **2013**, *32*, 230–239. [[CrossRef](#)]
3. El Bilali, H.; Probst, L. Towards an integrated analytical framework to map sustainability transitions in food systems. *Agrofor Int. J.* **2017**, *2*, 24–32. [[CrossRef](#)]
4. Markard, J.; Raven, R.; Truffer, B. Sustainability transitions: An emerging field of research and its prospects. *Res. Policy* **2012**, *41*, 955–967. [[CrossRef](#)]
5. Gernert, M.; El Bilali, H.; Strassner, C. Grassroots initiatives as sustainability transition pioneers: Implications and lessons for urban food systems. *Urban Sci.* **2018**, *2*, 23. [[CrossRef](#)]
6. Langendahl, P.-A.; Cook, M.; Potter, S. Sustainable innovation journeys: Exploring the dynamics of firm practices as part of transitions to more sustainable food and farming. *Local Environ.* **2016**, *21*, 105–123. [[CrossRef](#)]
7. Geels, F.W. Frank Geels Keynote Presentation at IST. Youtube. 2019. Available online: https://www.youtube.com/watch?v=PDdBgBOC_Nc&feature=youtu.be (accessed on 8 October 2019).
8. Darnhofer, I.; Sutherland, L.-A.; Correia-Pinto, T. Conceptual insights derived from case studies on “emerging transitions” in farming. In *Transition Pathways towards Sustainability in European Agriculture: Case Studies from Europe*; Sutherland, L.-A., Darnhofer, I., Wilson, G., Zagata, L., Eds.; CABI: Wallingford, UK, 2015.
9. Ingram, J.; Maye, D.; Kirwan, J.; Curry, N.; Kubinakova, K. Interactions between niche and regime: An analysis of learning and innovation networks for sustainable agriculture across Europe. *J. Agric. Educ. Ext.* **2015**, *21*, 55–71. [[CrossRef](#)]
10. Bui, S.; Cardona, A.; Lamine, C.; Cerf, M. Sustainability transition: Insights on processes of niche-regime interaction and regime reconfiguration in agri-food systems. *J. Rural Stud.* **2016**, *48*, 92–103. [[CrossRef](#)]
11. Diaz, M.; Darnhofer, I.; Darrot, C.; Beuret, J.-E. Green tides in Brittany: What can we learn about niche-regime interactions? *Environ. Innov. Soc. Transit.* **2013**, *8*, 62–75. [[CrossRef](#)]
12. Groissen, L.; Spira, F.; Meynaerts, E.; Valkering, P.; Frantzeskaki, N. Moving towards systemic change? Investigating acceleration dynamics of urban sustainability transition in the Belgian City of Gent. *J. Clean. Prod.* **2018**, *173*, 171–185. [[CrossRef](#)]
13. Lawrence, M.; Friel, S. *Healthy and Sustainable Food Systems*; Routledge: London, UK, 2020.
14. Caldwell, R. Models of change agency: A fourfold classification. *Br. J. Manag.* **2003**, *14*, 131–142. [[CrossRef](#)]
15. Hinrichs, C.C. Transitions to sustainability: A change in thinking about food systems change? *Agric. Hum. Values* **2014**, *31*, 143–155. [[CrossRef](#)]
16. Konefal, J. Governing sustainability transitions: Multi-stakeholder initiatives and regime change in United States agriculture. *Sustainability* **2015**, *7*, 612. [[CrossRef](#)]
17. Spaargaren, G.; Oosterveer, P.; Loeber, A. *Food Practices in Transition—Changing Food Consumption, Retail and Production in the Age of Reflexive Modernity*; Routledge Taylor & Francis Group: New York, NY, USA, 2012.
18. Vivero-Pol, J. Food as commons or commodity? Exploring the links between normative valuations and agency in food transition. *Sustainability* **2017**, *9*, 442. [[CrossRef](#)]
19. Zwart, T.; Mathijs, E.; Avermaete, T. *Can alternative food networks contribute to a transition towards sustainability in Flanders: Assessing the marketing functions of Voedselteams*; University of Leuven: Leuven, Belgium, 2016.
20. El Bilali, H. The multi-level perspective in research on sustainability transitions in agriculture and food systems: A systematic review. *Agriculture* **2019**, *9*, 74. [[CrossRef](#)]
21. Jurgilevich, A.; Birge, T.; Kentala-Lehtonen, J.; Korhonen-Kurki, K.; Pietikäinen, J.; Saikku, L.; Schösler, H. Transitions towards circular economy in the food system. *Sustainability* **2016**, *8*, 69. [[CrossRef](#)]
22. Truffer, B.; Markard, J. Transitions studies: A PhD guide into the wild. 2012. Available online: https://www.ethz.ch/content/dam/ethz/special-interest/mtec/sustainability-and-technology/PDFs/Truffer_Markard_2017.pdf (accessed on 8 October 2019).
23. Chiffolleau, Y.; Millet-Amrani, S.; Canard, A. From short food supply chains to sustainable agriculture in urban food systems: Food democracy as a vector of transition. *Agriculture* **2016**, *6*, 57. [[CrossRef](#)]
24. Cohen, N.; Ilieva, R.T. Transitioning the food system: A strategic practice management approach for cities. *Environ. Innov. Soc. Transit.* **2015**, *17*, 199–217. [[CrossRef](#)]

25. Moragues-Faus, A.; Morgan, K. Reframing the foodscape: The emergent world of urban food policy. *Environ. Plan. Econ. Space* **2015**, *47*, 1558–1573. [[CrossRef](#)]
26. Bell, S.; Cerulli, C. Emerging community food production and pathways for urban landscape transitions. *Emerg. Complex. Organ.* **2012**, *14*, 31–44.
27. Lyons, K.; Richard, C.; Amati, M. Food in the city: Urban food movements and the (re)-imagining of urban spaces. *Aust. Plan.* **2013**, *50*, 157–163. [[CrossRef](#)]
28. Fuenfschilling, L.; Truffer, B. The structuration of socio-technical regimes - Conceptual foundations from institutional theory. *Res. Policy* **2014**, *43*, 772–791. [[CrossRef](#)]
29. Wolfram, M.; Frantzeskaki, N. Cities and systemic change for sustainability: Prevailing epistemologies and an emerging research agenda. *Sustainability* **2016**, *8*, 144. [[CrossRef](#)]
30. Ilieva, R.T. Urban food systems strategies: A promising tool for implementing the SDGs in practice. *Sustainability* **2017**, *9*, 1707. [[CrossRef](#)]
31. Morgan, K.J.; Sonnino, R. The urban foodscape: World cities and the new food equation. *Camb. J. Reg. Econ. Soc.* **2010**, *3*, 209–224. [[CrossRef](#)]
32. Fendrychová, L.; Jehlička, P. Revealing the hidden geography of alternative food networks: The travelling concept of farmers' markets. *Geoforum* **2018**, *96*, 1–10. [[CrossRef](#)]
33. Milano Food Policy. Milan Urban Food Policy Pact. 2015. Available online: <https://www.foodpolicymilano.org/urban-food-policy-pact-2/> (accessed on 30 November 2019).
34. Coenen, L.; Benneworth, P.; Truffer, B. Toward a spatial perspective on sustainability transitions. *Res. Policy* **2012**, *41*, 968–979. [[CrossRef](#)]
35. Lawhon, M.; Murphy, J. Socio-technical regimes and sustainability transitions: Insights from political ecology. *Prog. Hum. Geogr.* **2011**, *36*, 354–378. [[CrossRef](#)]
36. Boschma, R. Proximity and innovation: A critical assessment. *Reg. Stud.* **2005**, *39*, 61–74. [[CrossRef](#)]
37. Coenen, L.; Raven, R.; Verbong, G. Local niche experimentation in energy transitions: A theoretical and empirical exploration of proximity advantages and disadvantages. *Technol. Soc.* **2010**, *32*, 295–302. [[CrossRef](#)]
38. Edelmann, H.; Quiñones-Ruiz, X.; Penker, M. Analytic framework to determine proximity in relationship coffee models. *Sociol. Rural.* **2019**. [[CrossRef](#)]
39. Torre, A.; Rallet, A. Proximity and localization. *Reg. Stud.* **2005**, *39*, 47–59. [[CrossRef](#)]
40. Rip, A.; Kemp, R. Technological change. In *Human Choice and Climate Change*; Rayner, S., Malone, E.L., Eds.; Battelle Press: Columbus, OH, USA, 1998.
41. Geels, F.W. Technological transitions as evolutionary reconfiguration processes: A multi-level perspective and a case-study. *Res. Policy* **2002**, *31*, 1257–1274. [[CrossRef](#)]
42. Geels, F.W.; Schot, J. Typology of sociotechnical transition pathways. *Res. Policy* **2007**, *36*, 399–417. [[CrossRef](#)]
43. Smith, A.; Voß, J.-P.; Grin, J. Innovation studies and sustainability transitions: The allure of the multi-level perspective and its challenges. *Res. Policy* **2010**, *39*, 435–448. [[CrossRef](#)]
44. Geels, F.W. The multi-level perspective on sustainability transitions: Responses to seven criticisms. *Environ. Innov. Soc. Transit.* **2011**, *1*, 24–40. [[CrossRef](#)]
45. Smith, A.; Raven, R. What is protective space? Reconsidering niches in transitions to sustainability. *Res. Policy* **2012**, *41*, 1025–1036. [[CrossRef](#)]
46. Brunori, G.; Rossi, A.; Malandrini, V. Co-producing transition: Innovation processes in farms adhering to solidarity-based purchase groups (GAS) in Tuscany, Italy. *Int. J. Sociol. Agric. Food* **2011**, *18*, 28–53.
47. Mardsen, T. From post-productionism to reflexive governance: Contested transitions in securing more sustainable food futures. *J. Rural Stud.* **2013**, *29*, 123–134. [[CrossRef](#)]
48. DuPuis, E.M.; Goodman, D. Should we go “home” to eat?: Toward a reflexive politics of localism. *J. Rural Stud.* **2005**, *21*, 359–371. [[CrossRef](#)]
49. Geels, F.W. From sectoral systems of innovation to socio-technical systems. Insights about dynamics and change from sociology and institutional theory. *Res. Policy* **2004**, *33*, 897–920. [[CrossRef](#)]
50. Fontes, M.; Sousa, C.; Ferreira, J. The spatial dynamics of niche trajectory: The case of wave energy. *Environ. Innov. Soc. Transit.* **2016**, *19*, 66–84. [[CrossRef](#)]
51. Dubois, A. Nurturing proximities in an emerging food landscape. *J. Rural Stud.* **2018**, *57*, 1–12. [[CrossRef](#)]
52. Arnold, M.G.; Hockerts, K. The greening dutchman: Philip's process of green flagging to drive sustainable innovations. *Bus. Strategy Environ.* **2011**, *20*, 394–407. [[CrossRef](#)]

53. Fenton, A. *Urban Area and Hinterland: Defining Large Cities in England, Scotland and Wales in Terms of Their Constituent Neighborhoods*; Social Policy in a Cold Climate, Research Note 004; Centre for Analysis of Social Exclusion (CASE) and London School of Economics and Political Science (LSE): London, UK, 2013.
54. Yin, R.K. *Case Study Methods. Complementary Methods for Research in Education*, 3rd ed.; Sage Publications: Washington, DC, USA, 2014.
55. Matzembacher, D.; Meira, F. Sustainability as business strategy in community supported agriculture: Social, environmental and economic benefits for producers and consumers. *Brit. Food J.* **2019**, *121*, 616–632. [[CrossRef](#)]
56. Beitzen-Heineke, E.F.; Balta-Ozkan, N.; Reefke, H. The prospects of zero-packaging grocery stores to improve the social and environmental impacts of the food supply chain. *J. Clean. Prod.* **2017**, *140*, 1528–1541. [[CrossRef](#)]
57. van Huis, A.; Oonincx, D.G.A.B. The environmental sustainability of insects as food and feed. A review. *Agron. Sustain. Dev.* **2017**, *37*, 43. [[CrossRef](#)]
58. Van Poeck, K.; Læssøe, J.; Block, T. An exploration of sustainability change agents as facilitators of nonformal learning: Mapping a moving and intertwined landscape. *Ecol. Soc.* **2017**, *22*, 33. [[CrossRef](#)]
59. Charmaz, K. *Constructing Grounded Theory: A Practical Guide Through Qualitative Analysis*; Sage Publications: London, UK, 2006.
60. Clarke, A.E. *Situational Analysis: Grounded Theory After the Postmodern Turn*; Sage Publications: London, UK, 2005.
61. New Novel Food Regulation. Regulation (EU) 2015/2283 of the European Parliament and of the Council of 25 November 2015 on Novel Foods, Amending Regulation (EU) No 1169/2011 of the European Parliament and of the Council and Repealing Regulation (EC) No 258/97 of the European Parliament and of the Council and Commission Regulation (EC) No 1852/2001. Available online: <https://eur-lex.europa.eu/legal-content/en/TXT/?uri=CELEX%3A32015R2283> (accessed on 11 August 2019).
62. Federal Ministry of Labour, Social Affairs, Health and Consumer Protection. Leitlinie für Gezüchtete Insekten als Lebensmittel. Available online: <http://docplayer.org/48664410-Leitlinie-fuer-gezuechtete-insekten-als-lebensmittel.html> (accessed on 11 August 2019).
63. Fuensching, L.; Frantzeskaki, N.; Coenen, L. Urban experimentation & sustainability transitions. *Eur. Plan. Stud.* **2019**, *27*, 219–228. [[CrossRef](#)]
64. Wolfram, M. Grassroots niches in urban contexts: Exploring governance innovations for sustainable development in Seoul. *Procedia Eng.* **2017**, *198*, 622–641. [[CrossRef](#)]
65. Chang, J. Hansalim Organic Cooperative—A Best Practice Model of Direct Sales between Farmers and Consumers. Available online: <https://orgprints.org/24218/7/24218.pdf> (accessed on 30 January 2020).
66. Forster, T.; Egal, F.; Renting, H.; Dubbeling, M.; Getz Escudero, A. *Milan Urban Food Policy Pact. Selected Good Practices from Cities*; Fondazione Giangiacomo Feltrinelli: Milan, Italy, 2015.

Sample Availability: The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to the fact of privacy restrictions.



© 2020 by the authors. Licensee MDPI, Basel, Switzerland. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (<http://creativecommons.org/licenses/by/4.0/>).