Urban Food Movements and Their Transformative Capacities

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Abstract. The paper explores how the transformative capacity of the urban food movement can be judged. To this end, it firstly presents what the founders of German initiatives and their members and customers tell about their motives and strategies. Subsequently, the various projects are discussed as part of a broader transformative social movement whose transformative capacity is considered from a non-economic perspective along the lines of transformative social innovation. A discussion of the urban food movement as a place of sustainability innovations compared to sustainability innovations within the established system follows before the findings on the transformative capacity are summarized.

The urban food movement in the 21st century

Over the last century, agricultural areas and food production have disappeared slowly, but surely, from Western cities. The highly compressed urban areas have become too expensive for competitive production, while refrigerators and other technologies of preservation have allowed provisioning from increasing distances. Farmers and their products now appear almost exclusively at weekly markets or with box schemes to meet the demand of a clientele wanting to buy regional, seasonal, and organic foods, while knowledge about cultivation and preparation for regional products has become an expert topic.

Over the past two decades, however, a new gardening movement has been booming in the cities in Germany and elsewhere and brings food production back to the cities: younger and well-educated people in particular participate in urban gardening in order to cultivate, harvest, and consume fruit and vegetables jointly. In community supported agriculture (CSA) and food assemblies, citizens join forces with nearby farmers to enable ecologically and economically fair food production while also building a community among farmers and non-farmers. Other urban consumers organize themselves in non-profit food co-ops to get access to healthy and sustainable food and to support a more sustainable food supply while avoiding the problematic side effects of the food industry. Moreover, rooftop farming, aquaponics, initiatives for edible cities, food-sharing, mobile community kitchens, food councils, and other activities arise from different motives. These include the desire to eat healthily, to create a natural space in the middle of the city, to meet the neighbors, or to make practical contributions against the deforestation of the jungle in the Global South so to ensure the food supply for the North. At the same time, a discussion has arisen regarding which purposes a municipality should make its land available for. In the research project "New opportunities for a sustainable food system through transformative enterprise models (nascent)" [1] our interest was to analyze the transformative capacity towards a

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sustainable food production of these initiatives. We selected projects from seven German cities that existed for at least five years and were interested in transdisciplinary cooperation and networking. We started from the observation that they position themselves beyond traditional fields of tension between production and consumption, urban and rural, economic and ecological goals; but rather aim at making urban food supply more sustainable while developing alternatives to the model of agro-industrial business criticized by many urban consumers.

A hundred years ago, Max Weber defined (ideal-typically) a "city" those places where the population is essentially satisfied with their everyday needs in the market and by products produced or acquired for sale on the market (Weber, 1980 [1921], p. 728). Even where there is arable land in the urban area, the typical city dweller does not cover his food needs on his own farmland (ibid, p. 731). Accordingly, a key feature of urban consumer households is that they are not viable without a private market and public infrastructure (Gestring et al., 1997, p. 10). Historically, the origin of an urban "allocation budget" (ibid.), which is completely dependent on the market and the state for its provisioning, is still a young phenomenon of industrial urbanization. In the course of the nineteenth century, the separation of household and place of work began, domestic work was reduced to mostly female reproduction work, and the dependence on external provisioning services with fresh water, food, and energy extended (ibid.). Since the middle of the twentieth century, this way of living has become a normality in the cities and the model of a modern way of living, emancipated from natural constraints.

This "emancipatory model" was first linked to freedom from the daily concern for survival with the modern city, and later with the industrial society as a whole. From the very outset, it goes hand in hand with ecological problems of a rapidly increasing consumption of energy, land, and materials, and counteracts all efforts to overcome its unsustainable effects through promises on progressing growth, comfort, and consumption possibilities. In the meantime, this "imperial mode of living" (Brand and Wissen, 2017), which ecologically but also socially and economically destroys the livelihoods of people (not only) in the Global South, has been criticized as a privilege based on economic exploitation and domination, which causes global environmental change, conflicts, and extreme inequalities (Lessenich, 2016). Its basic "denial of natural dependence" is termed by Reusswig (2017, p. 106, own translation) as "the necessary false consciousness" of modern lifestyles.

However, with the new millennium, community gardens, forgotten fruit and vegetable varieties, shared fields, and recipes for dealing with bearing crops have returned to the Western cities. The awareness of the global contexts and its distortions is growing. The perception and assessment of food, food production, and consumption in cities has since undergone a clear and medially enhanced change (Müller, 2011; Goodman et al., 2012; Stierand, 2014). Nowadays, the separation of city and subsistence, and the concomitant suppression of the conditions of provisioning within urban metabolisms, are increasingly questioned. Thus, in 2015, 140 mayors of large cities around the world constituted urban food policy as a new common policy field (see Milan Urban Food Policy Pact, 2015). Against this backdrop, urban projects of food production and reorganized distribution are no longer seen as backward-oriented romanticism in the West, but as pioneers of sustainable development and a civil society re-appropriation of urban spaces (Biel, 2016; Matacena, 2016; WBGU, 2016). The question of the future viability of cities and related agri-food systems is articulated as a missed planning task (Morgan, 2015).

Munich under the leadership of Reinhard Pfriem. The study examined the extent to which urban food projects and enterprises contribute to a sustainable reconfiguration of the food system in Germany (see: www.nascent-transformativ.de; duration 2015-2018; project number 01UT1428).

The manifold forms of place- and community-based initiatives and social enterprises to establish alternative food systems have been called in summary alternative food networks (AFN) in a literature dominated by research from the UK (Kneafsey et al., 2008; Tregaer, 2011; Goodman et al., 2012). In Germany, the growth and expansion of initiatives and companies in the field of AFNs rather resembles a social movement, primarily driven by civil society and firmly anchored in a particular social milieu. Engaged citizens participate in order to articulate their ecological, moral, and social concerns with food *in* the city. They no longer expect the desired structural change from established policy but aim at initiating direct change in key institutions like earlier social movements did, engaged in practical and place-based transitions in organizational forms, lifestyles, discourses, and infrastructures (see Hess, 2009; Smith et al., 2017). Our empirical study revealed a dense informal network of actors who share a transformative self-understanding and who intentionally align their activities to transformation towards "food sovereignty." The concept of food security was presented at the World Food Summit of the Food and Agriculture Organization of the United Nations (FAO) in 1996 by La Via Campesia, a worldwide alliance of smallholders, farm workers, fishermen, and indigenous people. In response to the technical notion of "food security," which ignores the side effects of global competition in the food sector, it has since become the political leitmotiv of urban consumers who are worried about the implications of the current imbalance of power embedded in the food system.

Despite all the differences and the details found in our German case studies, the urban food movement they are part of can be defined on the basis of five characteristics, namely 1) novel social and economic forms of collective action, 2) shared visions, which challenge incumbent structures of provisioning and instead revalorize food sovereignty, 3) networks of self-organized mutual support rooted primarily within local civil society, 4) experimental forms of food production and of securing livelihood, and 5) bonds of solidarity and identity, which create social cohesion and cooperative capacities (cf. Smith et al., 2017, p. 17). Their transformative activities, lifestyles, and economic practices connect to a corresponding milieu, which supports the existence of the initiatives and engages with the claims, narratives, and symbols of change, as will be shown. Nevertheless, it is questionable whether their transformative aspirations towards a more sustainable, fair, trustworthy, and high-quality food system can radiate beyond the grassroots movement itself and alter the dominant patterns of perception and interpretation about food and the agri-food system.

Therefore, the question that concerns me here is *how the transformative capacity of the urban food movement is to be evaluated.* Is it the beginning of a fundamental reconfiguration of urban food systems together with new food relations and making cities transformative places for sustainable development beyond a short-lived hype? Or, as critical readings suggest, are the informal projects overloaded with the transformative claim, so that we should be more skeptical about excessive glorification of AFNs and should instead criticize the failings of these initiatives, which ultimately offer little challenge to the prevailing logic of capitalism and exclude broad sections of the population. Are they to be considered as a current return of the already older life reform movement, which also stood up for vegetarianism, food reforms, garden cities, and a natural way of life (Vogt, 2001, p. 48)?

In order to find an answer, I will first present what the founders of German initiatives and their members and customers told us about their motives and strategies in interviews and surveys. In a second step, I discuss the various projects as a transformative social movement and assess their transformative capacity from a non-economic perspective along the lines of transformative social innovation (Haxeltine et al., 2016). A discussion of the urban food movement as a place of

sustainability innovations compared to the established system follows before I summarize the findings on the transformative capacity.

The motives of members and customers

The empirical study consists of 29 qualitative interviews with the founders of 26 food projects in seven cities in Germany and a one-day accompanying observation with further short discussions with different participants[2]. In addition, we carried out a quantitative online survey of customers and members, in which 212 people from 24 projects participated. The guideline interviews were transcribed and evaluated in a comparative way in MAXQDA. The quantitative data were evaluated with the statistical software R. Case dossiers were compiled from the guideline interviews, on-site visits, and an accompanying analysis of the self-presentation documents produced by the projects (flyers, brochures, web pages, books) in order to provide a case-specific analysis of the developmental histories and, if present, typical turning points. Finally, we discussed the results of our study and its evaluation in several workshops with representatives of the projects.

The goals of the founders

The founders of urban food projects give a whole range of goals in the interviews. Some focus more on local self-sufficiency (community gardens, vegetable garden projects), others more on community-based, solidarity-organized and financed projects to promote local and regional value chains (CSA, producer-consumer cooperatives; cf. Kropp and Müller, 2017). There are also political motives such as the establishment of supra-regional networks for fair and sustainably produced food (campaigns, food cooperatives, confederations). The initiatives show great differences in the organizational formats (legal form, inclusion of voluntary work, decision-making processes, etc.), as well as in their offers (food, opportunities for food production/consumption, events, educational programs, experiential spaces). In addition to the already extensively studied urban gardening and urban farming initiatives in Germany (Mueller, 2011; Stierand, 2014), the study included projects such as food councils, food assemblies, food co-ops, food-sharing collectives, and networks with a stronger political, media, or education-oriented focus on the urban food movement (Grasseni et al., 2015; Moschitz and Moser, 2017). In spite of their differences, we found a great homogeneity in the intentions expressed, which suggests a close exchange and mutual orientation. In the case of the founders and company executives, five characteristic features have been identified in this regard, which they share at their core (Kropp and Stinner, 2018).

    a)   Overcoming socio-ecological problems through comprehensive individual action
The starting point for many of the initiators was the perception of eco-social problems, such as the loss of biodiversity and soil fertility, ecological side effects of monoculture and agricultural techniques, and social inequality on a local and global scale. Several founders told us that they first tried to personally avoid the consumption of food associated with ecological damage and then extended their conscious selection to exclude products responsible for development problems in the South, gradually realizing the global problem context of hunger in the South and obesity in the North under an aegis of global competition. Two of them explained in quite similar words that

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[2] My thanks go to Sven Stinner, who carried out the survey and many interviews in the project and with whom I have already published some of these findings in German (Kropp and Stinner, 2018).

they therefore set up their own company with the goal in mind of "treating foodstuffs not as commodities but as an elementary resource for basic services" (interview quotation). Many emphasize the close connection between global ecological, economic, and social problems, which cannot be solved top-down, but only in a variety of local initiatives and overarching change processes directed to sustainable transformation. According to their interpretation, the problems have long been known in politics and among the public, without leading to structural improvement. They built their initiatives in the belief that in order to overcome these problems the problematic assemblage has to be dissolved as a whole and that they can develop alternatives which will serve as role models. They want to go far beyond sustainable consumption with their entrepreneurial activities and name key biographical experiences that motivated them to do so.

b) The creation of alternative economic forms with an exemplary character

Against this background, many founders concentrate on the development of alternative economic companies which involve producers and consumers and alter the existing system components in the economic sphere. They are concerned with the practical proof that sustainable food production and food sovereignty are possible and that transformative economies can support them and persist despite the (overpowering) conventional food system.

Although most are constantly struggling with the ecologically *and* economically successful establishment of their foundation concept, they characterize their initiatives confidently as socio-ecological innovations with their own success and quality standards. They deal intensively with concepts of fair and sustainable economic cycles and are aiming for a rediscovery of food sovereignty in cities. Their considerations can be linked to community economy theory, a perspective on interdependent economic activities beyond capitalist markets (Gibson-Graham, 2008)[3]. These founders confidently point to the collective phenomenon of a "transformative food movement" and consider their companies as "conscience of the economy" (interview quotations). As most of them possess a high media competence, they cleverly portray the advantages and motives of their alternatives with the aim to influence social values. As maxims of their business they cite fairness, solidarity, and transparency but not economic success in the conventional sense, i.e. growth, profit maximization, and efficiency.

c) Awareness-building and empowerment for transformative food production and consumption

Other founders concentrate more on awareness-building and learning processes and try to create opportunities to discover, develop, and integrate transformative knowledge and the necessary competences. They see sensitization and change of consciousness as a starting point for any structural transformation that requires special competences which are not taught in the education system: "If we send all children educated on one path and march in one direction and later, when they grow up, expect them to go the other way in the face of immense problems, or at least look over their shoulders, they lack any foundation. It is difficult when people are not trained to take responsibility for processes in communities and to have a certain value in caring, sharing, and doing" (founders' workshop quotation). This is why many food initiatives want to help develop specific forms of knowledge and focus on experimental learning spaces in order to convey transformative competences not only theoretically, but also practically and sensually. They want to involve as many people as possible, to rediscover forgotten practices in order to "collectively unlearn" (interview quotation) non-sustainable patterns of thought and routines. Food

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[3] www.communityeconomies.org/Home/Key-Ideas

consumption and production are seen as easily accessible entry points for change motivation, but for the long run, they are oriented towards a general redesign of the present non-sustainable society.

d) Strengthening local and regional networks

Still other founders see themselves as part of a larger movement for a broader socio-political transition. They are strongly interested in a revival of cooperation in supply chains and in neighborhoods. Therefore, they intend to create spaces for encounters and to organize meetings to improve the cooperation and trust between producers and consumers, within neighborhoods and between urban initiatives and municipal administration. Their engagement is designed to politicize food production and consumption, to establish means for strengthened food sovereignty and responsibility in order to overcome the high division of labor and the mutual isolation of producers and consumers and to promote a culture of conviviality in general. In the interviews they point to the general necessity of socially just and more inclusive forms of local coexistence, a conscious shaping of the natural conditions and the embedding of human life in ecosystem services. Their aim is to redesign exchange processes as relations of mutual support between partners instead of one-dimensional, merely functionally conceived supply chains. Some actors of the food movement are particularly concerned with the revitalization of local and regional economic cycles and the invention of practical networks for urban-rural co-development oriented towards sustainable transitions. Regional potentials shall be strengthened through the targeted promotion of surrounding farms. An important motive is the promotion of small-scale farms which operate according to ecological criteria.

e) Search for a meaningful activity without collaborating in non-sustainable ways of life

Finally, there are founders who have a strong intrinsic motivation to escape the unsustainable structures and constraints and to develop sustainable economies in their place. They are looking for possibilities to secure both subsistence and quality of life, in which the enjoyment of one's own actions is in harmony with a self-determined activity, which is positively assessable in retrospect. They absolutely want to remove their own lives and economies from the causal links to socio-ecological problem complexes and to contribute instead to a non-imperial mode of living without ecological and social side effects, even under the assumption of a lower standard of living.

Although the motives are different and associated with different priorities, all founders are aiming for a transformation of the urban lifestyle perceived as unsustainable and the development of appropriate capacities in the area of food supply.

Motives of customers and members

Remarkably, in the quantitative customer and member survey, we found a high degree of agreement with the intentions of the founders. Here, too, normative and change-oriented goals receive much higher approval than the search for friends, experiences, or fun (see Fig. 1). Most respondents were women (61%), the average age was 41 years and many have higher education. The incomes are astonishingly wide-spread and do not differ from the population average. Both, customers and members indicate almost unanimously their commitment to the protection of the environment, to expressing important values, and doing something positive.
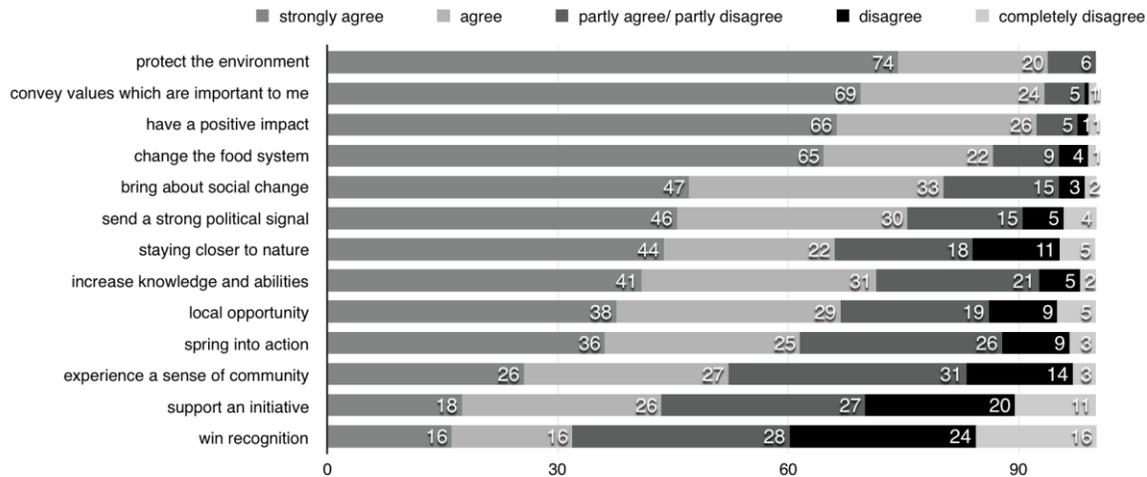
Figure 1: Motives of customers and members in urban food initiatives in Germany in percent; online survey with standardized answers (2017), n = 212

Demands for regional, healthy, organic and fair food play an important role (in this sequence). The price, in contrast, which is often used as an important criterion for purchasing decisions in consumer research, is said to be of little importance.

As a reason for their support of or cooperation in a food initiative, the customers and members primarily state ecological objectives, the desire to act as a role model and the importance of the initiatives as knowledge mediators. Entrepreneurial motifs, such as cheap food, the profitable sale of green products and services, the establishment of a new business, or the founding of a company that is at least so profitable that the founders will soon be able to support their livelihoods, play a subordinate role – both for the founders and the members and clients of the initiative as well. The common aim is to enable transformative forms of food production and dissemination and the testing of alternative forms of dealing with urban areas that are sensitizing to global problems. The goal is to develop companies in which non-material values of work such as the joint development of skills and the preservation of healthy environments are at the top. The urban consumer role, with its abstraction of food relations and production conditions, is challenged organizationally, narratively, and down to the level of everyday life practices. In many cases, start-up funds, government grants, and unpaid work are invested in the initiatives. Projects of this type are considered elsewhere as social innovations (Howaldt and Schwarz, 2010; Kropp, 2013), which focus on the joint development of novel practices to meet requirements that the market and the state do not satisfy. Through this kind of innovation, not only the practices themselves but also interpretations and relationships change (Seyfang and Haxeltine, 2012; Kirwan et al., 2013).

Transformative capacities and impacts of the urban food movement

The assessment of the transformative capacities of the urban food movement is rather difficult, given the relatively small scale of its economic activities and its anchoring in a comparatively narrow social-moral milieu. If, however, economic objectives are not the guiding principle, it is unsuitable to assess the transformative capacities on the basis of economic criteria such as turnover or customer numbers. Instead, social and ecological criteria are needed to evaluate the extent to which the grassroots innovation movement reworks the food system in cities. It is also clear that

niche projects are important, but that no social change can be expected from them alone. Social innovations are typically created in social niches along with immediate problem-solving (Beck and Kropp, 2012). However, they will only unfold "transformative" impacts if they trigger changes in the norms and institutional structures beyond their milieus and guide expectations in the mainstream. Whether this is the case will be discussed concerning changes in food-related *doing*, *organizing*, *framing*, and *knowing* following a typology of Haxeltine et al. (2016) and with a view to the respective dissemination opportunities in the city.

Indeed, the founders themselves seek their short-term outcome, above all, in a) the attention given to their enterprises on the urban stage, and b) in changes effected in the everyday practice of the members and customers. They point out that long-term impacts may be set in motion by symbolically recoding industrial provisioning patterns and by the development of new organizational and economic forms. Therefore, sense-making and symbolic production is to some of them more important than immediate changes in the food system. However, the initiated processes of change are multidimensional and fit into the concept of "transformative social innovations," which typically develop from "co-evolutionary" changes, albeit in niches (Haxeltine et al., 2016, p. 9). According to this concept, transformative social innovations go beyond one-dimensional and merely adaptive innovations but create the conditions for systemic change by bringing about transformative forms of social interaction that empower involved actors to undertake strategic actions. They gain their transformative capacity by "reshaping society as a more participative arena where people are empowered to look for ways to meet their own needs and those of others differently and hence to become less dependent on welfare systems and standardized product offerings from market economy and public-sector organizations" (Haxeltine et al., 2013, p. 4). In these arenas, transformative initiatives develop answers to the global challenges by changing four important dimensions, namely delivery systems and services, values and strategies, organizational structures and processes, and education. They lead to a broader transformation while affecting at the same time the forms of action and their material and technical composition (*doing*), the modes of organizing heterogeneous components and fellows (*modes of organizing*), the meaning and interpretive patterns (*framings*) as well as the necessary qualifications and knowledge production (*knowing*) (Haxeltine et al., 2016). Thus, co-evolutionary innovation processes face the challenge of dissolving the established socio-technical arrangements more than one-dimensionally and reconnecting the heterogeneous components in a relational way in order to enact new practices of cultural, technical, and organizational modes of action in the institutional spaces (Schatzki, 2005, Geels, 2010).

The urban food movement faces exactly these challenges in order to trigger transformation towards sustainability. They will only initiate socio-ecological change in the agro-food system if the urban population is prepared to alternate its comfortable but unsustainable food practices and if sustainable forms of urban food consumption could be generalized in all four dimensions. This is why sustainable impacts encompass the cultural patterns of interpretation and competences, the economic and organizational forms of food production and supply, and the technical and material means of production and processing involved. In consequence, there is great interest in a corresponding change in existing accumulation and regulation regimes (Gibson-Graham, 2008; Kneafsey et al., 2008; Reissig, 2014, p. 55). It is evident that in the open-ended development processes, only a "multitude of gradual transformations over a longer period of time [...] result in substantial, profound, lasting social changes which are not simple or extended reproductions of the given" (Reissig, 2014, p. 57, own translation), but are more than a temporary fashioning

phenomenon, leading to the establishment of new organizations, alternative problem-solving patterns, rules, connections, and structures.

For the study of transformative capacities of the urban food movement, the four dimensions were specified using the related goals stated by the founders and discussed above (2.1). To sum up, as far as *doing* is concerned their main focus is on fair ecological and regional production. With regard to *organizing*, they essentially demand the integration of producer and consumer perspectives (prosumerism) and greater participation in relevant decision-making. They want to free the current narratives (*framing*) from their industrial understandings and instead make food production and consumption more politicized and a matter of collective responsibility. In terms of *knowledge*, they aim to both change practical skills and spread cognitive awareness of the current lack of sustainability. In a second step, we evaluated all examined projects based on the case dossiers created in these eight subdimensions on a scale from 1 (merely adaptive) to 6 (very transformative). It became clear that, although all the projects generally take into account all dimensions, they certainly set different priorities. The differences were presented in spider diagrams and discussed at a workshop with the partners.
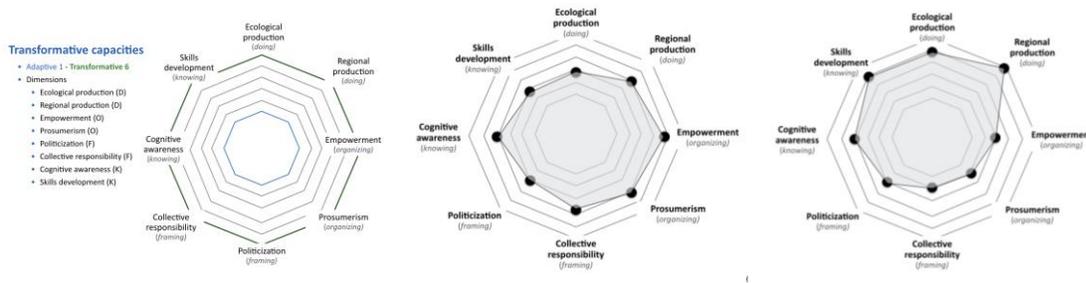
Figure 2: Evaluation of transformative capacities; conceptual grid and two case examples (food co-op 1, community food growing 2)

In spite of the quantitative weighting, this is a qualitative evaluation with the aim of comparing the significance of the four fundamental dimensions of transformation in order to take the differences into account.

a) The transformation of food practices and material conditions (doing)

The most obvious change related to the urban food movement is its multiplying of urban gardens, community supported agricultures, and edible greeneries and thus the unusual visuality of common gardening and connected with it locally produced herbs, fruit, and vegetables in visible transports of green box schemes in urban areas. What is striking is the visible acceptance towards weeds and wild herbs and the (re-)exploitation of recycled materials which are found in urban spaces. A new type of provisioning comes into the cities, which also onlookers easily distinguish from allotments. Food-related forms of community emerge which, atypically for cities, address neighborhoods as social groups and focus not on leisure activities but on physical work for plant and food production. In other places, urban tenants meet on pre-planted fields for the ecological cultivation of vegetables, which differs from the offerings of the garden markets but requires knowledge of regional and seasonal planting. The new *doings* are associated with common rearing and harvesting and much importance is given to professional vegetable-growing using common devices in contrast to the gardening in distinctive front and small gardens (Kropp, 2011). The active cooperation finds its counterpart in a changed food consumption, which, for example, is co-organized in food co-ops or solidarity purchasing groups and committed to values of social justice and environmental sustainability, but also to novel practices of food distribution and preparation.

Action is aimed at shortening value chains and making them regional and fair, which causes further individual changes, such as the reduction of meat and food waste in everyday life or the rediscovery of forms of storage and preservation. For these purposes, novel configurations are being networked, practices are oriented towards environmental sustainability, and materials other than those typical of food production are being used: old varieties, reused containers, spaces beyond known functional categories.

Such action, strange and untypical for city dwellers, is already imitated in many ways. In the last decade, the cultivation of herbs and vegetables on balconies and planting baskets has spread together with food and gardening events beyond the milieu. Persons from the cultural sector and the city administration copy the food movement with the aim to foster socially desirable behavior (cf. many projects of the "edible city"). Rules of social reliability and ecological sustainability are formulated for joint action.

b) *The transformation of organization and governance (organizing)*

Beyond situational meetings, cooperation follows a common organization in which working hours, working conditions, and work objectives are negotiated. These agreements are part of the reinvention of self-organization and collective empowerment (*modes of organizing*). The creativity of the urban food movement is by no means limited to the cultivation, distribution, and consumption of food. Processes of work planning, internal coordination, and external communication also show interesting innovations. Social media and internet and communication technologies are used intensively and with high professionalism for the coordination and promotion of the projects themselves and a wide range of other activities. Formats of networking are organized in a stylistic idiom that uses symbols with links to the movement as a means to distance itself from mainstream economic approaches. Classic producer-consumer relations are reconfigured and decision-making structures transformed in such a way that, for example, later consumers in CSAs or in food co-ops not only appear as investors but also participate in the choice of products and its pricing. This involvement creates new markets where neither price nor information steer the exchange but the vision of alternative food systems signals the way. Nevertheless, it is still disputed to what extent these grassroots innovation movements are subject to a neo-liberal co-optation of their labor power and urban responsibility or whether an emancipative reconstitution of urban food areas can succeed in a system transformation (Kumnig et al., 2017).

New procedures are developed to adapt decisions to the unequal needs and wishes of, for example, the founders, the salaried or voluntary employees, and the recipients, in order to foster participative modes of organizing. The governance systems and incentive and remuneration structures are subject to permanent negotiation, adaptation, and further development in all projects examined. New modes of competency- and needs-based pay are tested, because in the stock of business concepts nothing like this is proposed. The projects are not interested in a vertical size growth, but rather in a horizontal diffusion like the spread of strawberries, in the course of which new food projects are being established and supported by the existing ones within the growing network of urban food initiatives. As documented elsewhere (Seyfang and Haxeltine, 2012), the novel forms of organization are transformative for the participants of grassroots initiatives. In interviews, the members state that they acquire competencies in articulating interests and developing cooperative problem solutions, which they learn to use in other situations, too. The resulting political culture of community-oriented opinion formation and decision-making leads to further political fields of action and projects: many food initiatives are involved in assisting refugees together with organizations active here. In doing so, they take advantage of established

networks, which enable both fast-paced mobilization and organizational skills to link competencies and resources. Their ability to act is matched by a relational organizational competency (Chilvers and Longhurst, 2015) and leads to further changes in social relations and political participation.

c) *The transformation of meaning and interpretive patterns (framing)*

The practical and organizational changes accompany and support a change of the guiding principles and meanings (*framing*). Without exception, the respondents base their commitment on a necessary transformation of the industrial foundations, the continuation of which is seen as socially, economically, and ecologically disastrous. Climate change, loss of (agro)biodiversity, dwindling resources, and the financial crisis are seen as driving problems. Health-related motifs are said to play only a subordinate role, while great importance is given to the testing of alternatives for urban subsistence without unintended side effects. Many express the conviction of a high degree of urgency of transformation, which they perceive to be deliberately undermined in capitalist spaces. The protagonists consider themselves as particularly creative, well-educated, and pioneering milieus, which must lead the way in view of the immense persistence of the given food system, but also in view of the arrest of the political and economic elites in the growth paradigm. Their activities are explicitly aimed at the introduction of possible "future alternatives," "creating spaces where other ways of life can be experienced," respondents said. They politicize food production in food councils and design practical, organizational, and conceptual guidelines for the creation of better food relations in the future.

Narratives about change are central and omnipresent in the grassroots movement. They frame the movement as a whole and as individual decisions. The narrative about necessary and fundamental change directs all singular perspectives towards a more sustainable future and renders any recourse to continuation impossible. The actors are aware of the fact that they operate from a much-respected but small-scale scene whose importance depends on the successful creation of powerful narratives and symbols. The influence on food perceptions and urban development is visible in the media landscape and in academic concepts for urban development (Breuste et al., 2014, p. 250, Morgan, 2014; Stierand, 2014, 2016). However, the absorptive capacity of the established system, which already uses the same formulas in marketing, self-presentation, and product design, should not be underestimated. If institutions are understood with an accent on interpretive authority as cognitive schemata of action which predefine what is the case and is conceived as imaginable and feasible (Meyer and Rowan 1991, p. 42), one can consider the takeover of transformational discourses and symbols into mainstream role models as a success of the urban food movement: its framing has successfully penetrated into the social structures of meaning and significance. Nevertheless, as talk and action are only loosely coupled, urban consumers are obviously in the position to bridge cognitive dissonances between moral structures of meaning and their practice of everyday life in shopping and place-making. As a result, they easily accept the deliberate deceptions of "simulative" marketing in the sense of "second-order emancipation" (Blühdorn, 2013).

d) *The transformation of knowledge and competencies (knowing)*

Within the food movement the development of the transformative competencies and evaluation criteria (*knowing*) plays an outstanding and often underestimated role. It benefits from the "supportive conditions" of green knowledge-making in grassroots innovations, which is of major importance "if that consciousness, so to speak, is be cultivated and contribute to cultural transformation" (Jamison, 2003, p. 715). The initiatives undertake numerous efforts to promote

skills to evaluate food systems and to implement sustainable alternatives on the part of those involved and on the part of the interested public. According to the food movement, the transformation has to begin "in the heads" and by enabling people to recognize and implement the necessary changes. Therefore, the integration of new fellows in the handover of vegetable fields takes place within the framework of a consultation event tailored to the local conditions of action and involves continuous support. The initiatives aim, on the one hand, to develop *cognitive* assessment competences in order to be able to critically compare forms of sustainable and just food production with processes in the dominant food sector in a more comprehensive way than marketing of green products does. On the other hand, *practical* skills are developed, for example for the cultivation, storage, and processing of produced foodstuffs or for the harmonization of interests across the value-added stages. As both forms of knowledge-making are complex and multidimensional, they are seen as obstacles to sustainable innovation (Ketata et al., 2015; Kropp, 2017). Almost all initiatives therefore build libraries and a network of contacts with consultants and offer practice-oriented help. Many have published their own guidebooks or continuously inform employees and customers via handouts and digital blogs. Time and again, the initiatives are confronted with considerable knowledge gaps for which expertise is still missing, such as dealing with typical urban conditions in food production.

For their competence development, the projects are not based on one-sided education processes, but experiment with models of knowledge co-production: knowledge transfer is understood either as a cooperative process in which both the founders learn from participants, and vice versa, and an open-ended process in which continuous improvement and reflection takes place. Some initiatives are testing formats of design thinking in order to get acquainted with innovative forms of knowledge production, while others cooperate in transdisciplinary LivingLabs in order to explore new possibilities together with implementation-oriented science. Also worth mentioning is their cooperation with schools to give urban children a glimpse into food production. Learning processes also include rediscovering and acquiring skills that were lost in the course of industrialization (e.g. storage methods, solidarity financing models), and rethinking connections which modern society blanked out (e.g. unpaid reproductive work). In doing so, the food movement faces the difficulty of supporting the unlearning of unsustainable routines and of those abstractions which Weber considered to be constitutive of the urban context. In these processes, they generate according to Smith and Fressoli "highly relevant" knowledge for a sustainability-oriented innovation policy (Smith and Fressoli, 2013 p. 115).

The findings about transformative ways of doing, organizing, framing, and knowing underpin both the transformative claims of the urban food movement as well as their action-oriented forms of reworking food relations. The initiatives undermine the institutionalized universe of urban certainties concerning food-related expectations, planning, learning, and decision-making. However, the fact that they are (still) far from representing the mainstream of society is not disputed here. On the contrary, the next step has to tackle the question why the impact, measured in sales figures and transformation of the existing agri-food system, is nevertheless minuscule.

In their pioneering phase movements lead to spatially, temporally, and socially limited changes which are empirically first seen as a variation of local patterns of action, just as sustainable innovations are typically generated in niches (Grin et al., 2010). The co-evolution aspect points to the fact that the change of certain elements in a field of action lead to further changings that are more or less strongly interrelated (Haxeltine et al., 2016, p. 9). Although the food movement alters

the mainstream food practices only to a minuscule and merely symbolic extent, this at least is done very visibly. The persistence of the existing food system and its anchoring in a dominant regime of agricultural policy and a highly concentrated food industry must be taken into account for an evaluation of the transformative power. In addition, despite the goodwill and high commitment of the initiators, one must also state that the movement's initiatives have remarkable limits. From an ecological point of view, they do not succeed in completely discontinuing non-sustainable products and processes. From an economic point of view, the enterprises are not viable without the support of unpaid (voluntary) work and funding, and in social terms, many projects are only attractive to a very small segment of the population (see Goodman et al., 2012).

The instability of urban food projects and the resultant disillusions lead many observers to believe that the great transformation can only be achieved by greening the conventional system and independent of ecological awareness. However, the conventional system only moves when alternative visions and their medial echo push it. Moreover, the chances of avoiding rebound effects (Santarius, 2014) are higher when changes do not rely on reluctant acceptance but are motivated and anchored in alternative visions, food styles, and identities and an understanding of the superordinate connections. Against the background that the initiators are aiming at a comprehensive change in urban food habits and are finding growing enthusiasm among the public, in the last section I will shed light on their chances of penetrating the conventional food system.

Will the urban food movement change the agri-food regime?

Research into the distribution of sustainability innovations is conceptually only at the beginning, although the development of sustainability-oriented innovations is being pushed forward politically and a subject of broad scientific engagement (Grin et al., 2010; Kropp, 2017). That is because of a widespread deterministic belief in linear models of (technical) innovation, which does not meet the social character of diffusion of innovations and because the concept of sustainability transition externalizes the sociologically demanding analyses of socio-institutional contexts of diffusion to an under-determined "landscape level" (Geels, 2010; Grin et al., 2010). Sociological categories such as the weight of unequal resources, unequal possibilities for the control of relevant definitions, or the importance of institutional persistence have only recently been discovered in this perspective (Geels, 2014). In addition, existing development paths act as barriers to transformation; in our case this the urban abstraction of food. In order to assess the transformative capacity of the urban food movement, a discussion of its ability to deal with (a) diffusion requirements internally and (b) externally with barriers given in an almost unique market and power concentration is needed.

a) The challenges of transformative innovation

Sustainability-oriented innovation processes require not only the variation of some components in existing formats of production and organization, but comprehensive change processes associated with the need to handle uncertainties and complexity and to break with existing thinking and solution models (Ketata et al., 2015). While it is clear to the protagonists that most conventional food practices are not compatible with sustainability goals, the development of alternatives requires extensive efforts to gather information and to test new procedures.

The initiatives must, for example, clarify how the production processes are to be assessed in terms of energy consumption and social justice and how soil quality can be determined in an urban area, to name but a few of the challenges for which no standardized information can be obtained. Secondly, it is part of their everyday innovation to deal with uncertainties that are

multiplied by the need to deal with target conflicts. How should the ecological criteria (for which no clear knowledge base is available) be weighted against economic criteria and social demands on fair and participatory processes? How can certain long-term transformation targets be agreed with short-term strategies of dissemination? Thirdly, the distribution opportunities of the grassroots food movement depend on its creativity in the handling of resistances which they are faced with, for example, by city administrations or which result from traditional expectations of food, food production, voluntary work, or urban space. The movement must be able to carry out transformative ideas against contrary self-understandings in their surroundings while dealing with many unclear factors.

Further difficulties lie in the creation of cooperative processes beyond the near-niche, but without abandoning disruptive qualities. Existing interfaces and the needed adaptation of sustainability-oriented food systems into an overall unsustainable system prove to be a problem. The high price sensitivity typical for Germany, the focus on convenience, and the abstraction of superordinate connections are firmly inscribed in existing supplier relationships, marketing forms, and the culturally dominant practices of food consumption. For these reasons, almost all projects examined develop new interfaces, often avoiding conventional food trade. They use, for example, virtual communication and diffusion tools between producers and consumers or within food assemblies.

In general, external innovation stimuli such as funding measures, laws, and certificates are considered as key drivers in order to achieve sustainable innovation efforts (Kesidou and Demirel, 2012). However, an analysis of different studies (Brückl, 2007, pp. 85ff.) led to the conclusion that even after such impulses, marketing considerations such as perceived consumer preferences, cost-saving potentials, or product superiority play an essential role for the decisions in the mainstream system, while environmental motives rank last. Transferred to our research field, this means that the established companies hardly orient themselves to their own sustainability goals, but are merely reacting to consumer preferences which are evoked by the movement. They move towards a more sustainable offer if market conditions suggest this, for example by redefining desirable product characteristics and changing the search criteria of their customers.

b) *The urban food movement and the dominant food system*

In discussions with the founders of alternative food initiatives in interviews and focus groups about possibilities of scaling up the movement it became clear that from their perspective a successful diffusion into the conventional food system is unlikely (at least in the short term). On the contrary, they assume that changes in the innovative niches are more likely to occur in the context of marketing cooperation than changes in the dominant system. They elucidate how standardization requirements and price pressures endanger the sustainability initiatives, such as the insistence on long minimum durability, standard containers, and early delivery specifications. Moreover, quality criteria of the food movement can hardly be communicated if their products are presented together with products of regional producers in the food trade, which are perceived as "similar." Since unsustainable structures in the mainstream shape consumers' guiding principles and interpretation, any integration of transformative practices into the existing markets is difficult (Smith and Fressoli, 2013), let alone a "penetration" or "crowding out" of these economic forms.

Remarkably, the interviewed pioneers of the urban food movement do not aim at implementing structural change in the mainstream agri-food system through their activities, but they rather focus on such transformative strategies which either push forward a supplementary system or a network-like institutionalization of alternative forms. They expect a long-term transition to new types of food arrangements with more sustainable economic forms, more

equitable participation concepts, more democratic economies, and alternative understandings of urban quality of life. Thus, what is intended is a transformation of food conditions "from below." Public events and campaigns on the urban stage, the re-politicization of foodstuffs in food councils, and organized networks of like-minded support groups shall push the established regime towards a more far-reaching change than just "greening" a small portion of the food offer.

To this end, they draw attention to the side effects for health and environment caused by the mainstream agri-food system and demonstrate that alternative practices are possible and sustainable. At the same time, they problematize the limits of the established model of urban provisioning, create alternative economies, and trust in the transformative potentials of young urban milieus. It is only the future that can show how far this movement can shape transformation. To date, research has focused on the ingenuity that characterizes the transformative power of the food movement and which has hitherto been essential in its self-empowerment and in bringing about transformative skill innovations.

Conclusion: Between innovative scene and transformative movement

Sustainable transformations require both eco-moral people and appropriate structures of action. The urban food movement takes up the challenge in a variety of ways. In confrontation with the dominant food system it is confronted with long-term routines which are shaped by the industrial emancipatory model and the interests of the mainstream economy. This is why the pioneers of the urban food movement have hitherto acted in niches where they find support from the milieu. They no longer limit themselves to the demand for change but are preparing a fundamental transformation in practice by promoting food sovereignty among those citizens who do not want to wait for politics or the economy to meet their needs. The question is, whether this action orientation is to be regarded as a socially, temporally, and spatially limited fad or whether the movement marks the beginning of more sustainable food practices (Sarmiento, 2016).

To give an answer, I explored in the first section the objectives of the founding figures and of the members and customers. It became clear that they were explicitly demanding transformation, namely by providing new types of food arrangements with alternative economic and organization models and a corresponding knowledge production. The interest in change goes beyond the self-sufficiency of healthy and organic fruit and vegetables and is aimed at transforming the production and consumption practices. Accordingly, as was elaborated in the third section, the investigated projects "co-evolutionarily" develop and test alternative food practices in cities, new forms of organization as well as alternative models of knowledge production. In all four dimensions of doing, organizing, framing, and knowing, their innovations radiate beyond the niches of the food projects themselves and are taken up in (the marketing of) the established food system as well as by actors of urban development and from the cultural sector. Compared to the dominant system, however, the impact still remains in marginalized niches or is absorbed in such a way that the dominant system is not forced to substantially change its unsustainable practices. In addition, the urban food projects serve at the very top its own milieus and gain their stability with unpaid volunteer work. Nevertheless, they provide those "generative capacities" (Sarmiento, 2016, p. 486) that make a transformation of food practices in cities thinkable and feasible at all. They generate productive tensions and break with unsustainable orientation sets of the urban population and thereby pave the way for a postindustrial food trade. For the scientific evaluation of its transformative capacity, the critical note from the diverse economies school should be taken seriously so as not to reproduce the "capitalocentric"

interpretations in research by endlessly evoking the unequal balance of power (Gritzas and Kavoulakos, 2015), but rather to appreciate the diversification and performance appropriately.

At present, a particular tension of transformative movements such as the urban food movement is to *locally* develop innovative options for overcoming *global* sustainability problems. This tension typically results in three challenges concerning its transformative power (Smith and Fressoli, 2013): First, projects must respond to specific contextual conditions, although they are concerned with a generalized spread of their problem-solving. Second, they must adapt to the present conditions that they want to fundamentally change at the same time, and third, they must develop project-based solutions for social and ecological transformations, which in fact require a fundamental system change (ibid., p. 119). All food projects examined are confronted with these challenges: the local adaptation of symbolic and material practices hinders supra-regional dissemination, but every project needs to individually develop implementable approaches and organizational forms which can be connected to the existing conditions. The inclusion of voluntary work makes many of today's initiatives viable but is not regarded as a long-term solution with necessary income generation. And finally, current success criteria, which are still formulated against dominant growth-oriented benchmarks, meet neither the innovation orientation of the urban food movement nor the superordinate sustainability requirements. As a result, paradoxically, those projects of the urban food movement that are the most similar to the mainstream and create the least "disruptive" innovations often appear to be the most successful.

The dog bites his tail: the transformative capacity of the food movement is to be criticized either for the fact that the transformations produced are not big enough or with too great a social or ecological compromise. Or, on the contrary, that the transformative projects deviate too much from the mainstream to be generalizable, and thus remain in a niche. However, since the objective is to change urban food practices that are firmly anchored in existing patterns of thought and action, the challenge is to change the cultural, political, and economic conditions at once. From an economic perspective, the paradox is known: the most successful are incremental improvement innovations, which can be easily connected to existing conditions, and which are hardly perceived as innovations in retrospect. But at the same time, only disruptive innovations will lead to those innovation leaps which open up new development paths for new actors, new business fields, and new cultures and consequently destroy the old unsustainable industries. These types of disruptive innovations are most likely to have a fertile ground in cities with their heterogeneous publics. Yet, even if the food movement discussed generates neither the processes nor the products that will define the urban food system in the future, it still can offer possibilities for "other worlds" of food production and food economies.

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