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Urban food systems as vehicles for sustainability transitions

E. Gunilla Almered Olsson[CDMR]

University of Gothenburg, Faculty of Social Sciences, School of Global Studies – Human Ecology, Box 700, 405 30 Gothenburg, Sweden; email: gunilla.olsson@globalstudies.gu.se

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Abstract. Strategies and action plans for sustainable food provisioning and urban food security are in progress in many urban regions both in the global North and South. A number of urgent challenges need to be confronted such as increasing uncertainty and unpredictability related to stronger dependence on a global market for food import, ongoing political unrest and environmental conflicts, increasing resource scarcity and climate warming making food production hazardous. There is an increased vulnerability with respect to food security for human societies, both in developing and developed countries. The food security dimension of access to healthy food is related to equality and poverty and is relevant for cities in the North via the segregation challenges. The food system issue is well-suited for assessing sustainable development since food provisioning is both a multiscale and cross-sectorial issue and thus addresses more than the three dimensions of social, economic and environmental sustainability. How is the planning for sustainable food strategies in urban regions in Europe concordant with the United Nations Global Sustainable Development Goals and with the transition towards sustainable futures? This paper deliberates on using the food system issues for sustainability transition, drawing on the forthcoming 2018 IPBES (Intergovernmental Science–Policy Platform on Biodiversity and Ecosystem Services) work on pathways for sustainable futures and a recent survey of existing urban food system strategies. Against this background, some reflections are given relevant for the ongoing work on a local urban food strategy for the city of Gothenburg, Sweden.

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1. Introduction

The food security concept was defined by the Food and Agriculture Organization (2008) of the United Nations as a situation when citizens "have physical, social and economic access to sufficient, safe and nutritious food which meets their dietary needs and food preferences for an active and healthy life." However, in the context of urban food system plans and strategies for the Global North towards 2030, the food security concept has a wider connotation interpreting human wellbeing as linked to three sustainability dimensions: ecology, economy and social-cultural aspects (World Commission on Environment and Development, 1987), or in a more elaborated form as expressed by the 17 United Nations Sustainable Development Goals (hereinafter: SDGs) (United Nations, 2015). This implies that production methods, processing, transportation and distribution, markets and food outlets, food price for consumers and the economic dimensions for all links in the chain, viz. the whole food system (Ericksen, 2008), need to be considered.

Urban populations both in Global North and Global South are dependent on the global food systems (Misselhorn et al., 2012). This dependence has a profound impact on people's daily life and creates immediate vulnerability and unpredictability related to food security. The global food system is linked and fuelled by the global trade market whereby ongoing price competition and under-priced levels of natural resources, including fossils, are accelerating the trend of enlargement of production units. However, the trend of increasing production units and the ambition for production increases are amplifying global environmental changes through land use changes, such as the transformation of forests and native grasslands into arable fields and unsustainable plantation activities (Hermele, 2014), and indirectly driving biodiversity decline at landscape and species levels (Intergovernmental Science–Policy Platform on Biodiversity and Ecosystem Services, 2018 – hereinafter IPBES, 2018). The climate dimension with greenhouse gas emissions from the global food systems is well-known and includes production processes as well as transportation of commodities and of food products (see, e.g., McMichael et al., 2007). The functioning and efficiency of the global food system necessitates the fulfilment of a number of preconditions, such as access to land and resources, absence of environmental disturbances like climate change effects and lack of disturbances from political and military conflicts or terror attacks (Sage, 2013; Porter et al., 2014; Dyball, 2015; Morgan, 2015; Olsson, 2018a). Food issues are currently in the centre of the public debate with issues such as the health and nutritive dimensions, the production process and the content of additives in the food products, the accessibility of fresh food, the origin of food products, etc. Alternatives to the global food system are requested with shorter food chains and transparency in the food processes.

One of the main challenges in urban regions is segregation among citizen groups which implies unequal access to resources, also including access to fresh and healthy food products. It gives relevance to the concept of *food justice* which refers to "… *hav*[ing] *the capacity to make one's voice heard so as to have access to food and resources*" (Hochedez, Le Gall, 2016: 5). Food justice relates directly to social inequalities which are often linked to structural urban inequalities (Kolb, 2015) and various forms of social, cultural, economic and spatial exclusion (Alkon, Agyeman, 2011; Hochedez, Le Gall, 2016).

This relates to social sustainability and dimensions of urban resilience.

Another side of the urban sustainability dimension is the potential for linking urban and rural regions by the food system issues. The peri-urban and rural regions offer the possibility for re-installing food production and processing and thus obtaining shorter food chains and a potential for transparency and consumer's influence. There is a potential for increasing both urban and rural viability via the food system, e.g., new employment possibilities, new food enterprises, and by reclaiming the value of produce from the region, 'terroir' (Feagan, 2007; Sonnino, 2016).

Against this background of urban challenges and with growing insight into the consequences of the dependence on the global food system, several cities in the Global North have issued local/regional food strategies, food charters and other food system-related documents in the aspiration to improve urban food security and to encourage sustainable food system activities (Moragues Faus et al., 2013). The food system concept is a genuinely transdisciplinary topic with repercussions for all societal and environmental sectors, and the food issues are crossing all United Nations Sustainable Development Goals (United Nations, 2015; Obersteiner et al., 2016). It is of interest to look at the links between the food strategies and the SDGs to capture the potential of the food strategies as a point of departure for sustainability transformations.

The aim of this paper is to explore the potential of using urban food strategies as vehicles for sustainability transitions by relating them to United Nations' SDGs (United Nations, 2015) and to the recent IPBES overview of pathways for sustainable futures (IPBES, 2018). This is performed by a meta-study of two surveys of urban food strategies in North America and Europe. The two most recent food strategy surveys were selected, a) Sonnino (2016) – a general survey of content in 16 urban food strategies in the Global North; and b) Ilieva (2017) – an in-depth analysis of five urban food strategies in North America and Europe and how they relate to the 17 SDGs. The results are related to the ongoing work on a local/regional urban food strategy for the city of Gothenburg, Sweden.

2. On the diverse field of urban food system strategies

Local and regional food system plans and policies are emerging as parts of national and municipality efforts towards sustainable development (Ilieva, 2017). The national food policy plans are more general, see e.g., Sweden's national food policy (Government Offices of Sweden, 2017), while local strategies aim to embrace the whole context from farm to consumer's table and to provide an integrated policy framework related to the local and regional preconditions (Ilieva, 2017). Such food system strategies exist for several large cities in North America, e.g., New York, Chicago, Los Angeles, as well as for several cities in Canada like Toronto, Seattle and Vancouver. In Europe, cities in the United Kingdom are well represented, e.g., London, Bristol and Manchester (Carey, 2013; Sonnino, 2016). Cities within the Urban network URBACT (2018) such as Lyon and Brussels also have food system strategies in place and in Gothenburg, Sweden, the work is ongoing. In the examples of food strategies mentioned previously, most strategies aim at: Health and wellbeing (e.g., by access to healthy food products); Environmentally friendly production methods and increased urban gardening; Economy and community development (support for a vibrant local economy, green economy, e.g., by supporting local growers, retailers, markets and employment); Prevention of food wasting; Social and cultural aspects (support for resilient, close-knit communities, food-friendly neighbourhoods, e.g., through the promotion of local food culture). Some cities additionally place their focus on: Food security related to social justice/food justice; Learning/empowerment (e.g., lifelong learning, empowered residents); Urban-rural linkages (i.e. connecting the city and the countryside through food) (Lerman, 2012; Moragues Faus et al., 2013; Sonnino, 2016). The term *foodshed* is used in some food system strategies. It can be interpreted as the geographical area that connects producers and consumers or, in analogy with watershed, a framework for envisioning the flow of food in the food system (Peters et al., 2009).

The plans are being developed by the city councils often with participation from several departments responsible for different sectors. In most

plans and strategies, stakeholder groups and food networks have been involved either by consultation or by direct participation in the development of goals and actions (Moragues Faus et al., 2013). In Gothenburg, the transdisciplinary network 'Urban Food' (Mistra Urban Futures, 2018) is used as an advisory group for the ongoing food strategy work.

3. Sustainability transitions and how to reach them – on pathways towards sustainability

Sustainability transitions aspire to address critical challenges of contemporary societies by linking ecological integrity, societal viability and intergenerational justice (Frantzeskaki et al., 2012; Markard et al., 2012; Luederitz et al., 2017). Such key challenges are environmental degradation including climate change, and the growing inequalities in resource accessibility and in participation between different human groups and societies at local, regional and global levels, thus demanding cross-sectorial and cross-scale societal changes. The sustainability concept is highly normative and greatly contested, and thus opens for a number of different interpretations (Chang, 2013). The most pronounced demarcation is between the weak and strong interpretation of sustainability, where weak sustainability is linked to the view that natural and biological resources can be substituted by technological work and manufactured assets, while the interpretation of strong sustainability implies consciousness of globally limited resources and an overall reduction of material consumption (Muraca, 2012; Pelenc, Ballet, 2015). There is an emergent literature on how to reach sustainability and on the trajectories of this process, transition pathways to sustainability. The description of the transition pathways has been categorized in different groups of pathway narratives (Luederitz et al., 2017) and—quite logically—they differ according to the diverging interpretations of sustainability (Luederitz et al., 2017; Hausknost et al., 2017).

A survey and an analysis of sustainability transition pathways related to the UN-SDGs were published in March 2018 within the UN-IPBES framework (IPBES, 2018: chapter 5). It was found that among the pathway narratives, the *Transition Movements* narrative has the widest and most complete concordance with the different Sustainable Development Goals, although there is lower conformity with SDG 7 (energy), SDG 13 (climate), SDG 17 (partnership) (IPBES, 2018). A short description of the *Transition Movements* follows here. In contrast to the *Green Economy* and *Low Carbon Transformation* narratives described in the IPBES assessment (IPBES, 2018), pathways of the *Transition Movements* narrative involve changes in relational values towards resource-sparing lifestyles (including, e.g., food and energy), and in some cases they emphasise explicitly non-GDP growth (1) (ibid.). They incorporate the development of innovative forms of agriculture combining indigenous and local knowledge with technological innovations (e.g., agroecology, agroforestry, organic agriculture or urban agriculture), transport and energy models that limit impacts on nature, climate and water. Enhancing quality of life, especially by supporting the SDGs, is complemented by a focus on reduced social inequities and full employment. These goals are enabled by new social models which aim to reduce market globalisation and inter-regional flows, and support cultural identities, knowledge sharing and transformative capabilities. Transformative capabilities are defined here as individual and collective capacities to improve and enrich quality of life by changing factors affecting their lives, of which the environment is central. Apart from education, transformative capabilities include for instance social capital, local leadership and empowerment, trust building and collaboration.

4. The urban food system strategies and the Sustainable Development Goals

4.1. Methods and data material

The principal method underlying this study was content analysis. Content analysis is the assessment of presence of specific text elements that can be related to some pre-categorized phenomenon (Boréus, Bergström, 2013) – in this case the 17 SDGs.

Sources for this meta-study comprise two surveys of urban food systems: Sonnino (2016) and Ilieva (2017). The study by Sonnino (2016) covers 16 urban food system strategy documents from Europe and North America (seven in the UK: London, Bristol, Plymouth, Newquay, Manchester, Lewisham, Brighton and Hove, two in Canada: Toronto and Vancouver, six in the USA: New York, Philadelphia, Chicago, Los Angeles, San Francisco and Oakland). The food system survey by Ilieva (2017) is based on an in-depth analysis of five urban food strategies (New York, Philadelphia, Chicago, Los Angeles and Toronto) and how they relate to the 17 SDGs, which is analysed by a selection of indicators for each SDG. Ilieva's study (2017) was used as additional source and comparison. Since the work on an urban food strategy in Gothenburg is ongoing there are no published materials available.

Content analysis was performed on Sonnino's study, and the different elements, actions, strategies for each food system strategy were extracted and classified to the 17 SDGs. The text extracts resulting from the conducted content analysis were put in a matrix consisting of the 16 city food strategies and the 17 SDGs which enabled and facilitated an assessment of both the frequency and presence of each SDG in the different food strategies as noted in Sonnino's paper.

It should be noted that sometimes an element was fitted in several SDGs, or could not be exclusively linked to only one SDG. For instance, expressions such as '[to] reduce the environmental impact of consumption' and 'environmental sustainability' fit SDG 6 (Clean water and sanitation), SDG 13 (Climate action), SDG 14 (Life below water) and SDG 15 (Life on land), while the expression 'sustainable and resilient food economy' could be found in SDG 2 (No hunger), SDG 8 (Decent work and economic growth) and SDG 9 (Industry, innovation and infrastructure).

4.2. Results

From the working matrix – see the Methods section above – it was possible to assess the presence of the SDGs in the food strategy documents for the 16 cities, based on the classifications of elements, actions and policies found in Sonnino's study (2016). The most frequent SDGs in the food strategy documents are listed below, in descending frequency rank order of the SDGs. The notations of strengths and challenges under each SDG are based on the text extracts in the content analysis.

SDG 2 – No hunger:

Strengths: localized, holistic food system as opportunity; equal access to nutritious, healthy, fresh & fair food; food security

Challenges: vulnerability from the dependence on the global food system;

SDG 11 – Sustainable cities:

Strengths: regionalisation of the local; urban planning/land use; public procurement – linking urban-rural; community development by cultural and economic development; close-knit communities; integrated, cross-sectoral approach to food policy;

Challenges: a more enabling planning system that reconnects urban, peri-urban and rural areas;

SDG 8 – Decent work and economic growth:

Strengths: local and healthy food movements as economic development strategies; Community Supported Agriculture (CSA) – economic arrangement for producers-consumers;

Challenges: reorientation of farm subsidies to support the production of healthy food for local markets; support for urban agriculture and community growing schemes, support for alternative retail outlets as farmers markets street markets; development of distribution systems;

SDG 9 – Industry, innovation and infrastructure:

Strengths: food hubs; transit-oriented planning of fresh food outlets; tourism;

Challenges: encouraging diversity in innovation and collaboration that create local and diverse economic development;

SDG 10 – Reduced inequalities:

Strengths: promoting social justice and social equity; local food growing projects can be part of a wider strategy tackling health inequalities and food deserts;

Challenges: [not given in the text source]

SDG 15 – Life on land:

Strengths: environmental health and sustainability; protecting and strengthening regional biodiversity and natural resources; enhance the urban environment.

Challenges: [not given in the text source]

The following elements and formulations appear only in the UK documents: a) 'vulnerability to market forces and global food system' (SDG 2); b) 'reduced inequalities' (SDG 10); However, this formulation is also the heading of SDG 10 which was addressed in the five North American cities: New York, Philadelphia, Los Angeles, Chicago and Toronto in Ilieva's study (2017). The formulation of indicators she uses explains why SDG 10 did not appear for those cities in Sonnino's study (2016). The following formulation appears strongly in UK cities and in Toronto, Canada, but is only present in one US city (San Francisco): "reduced environmental impact of food production, environmental health" (SDG 15).

The concept *foodshed* is used in the documents for three North American cities: Vancouver, San Francisco and Los Angeles. The interpretation of this concept has an interesting bearing on visions and actions for the food systems. *Foodshed* is interpreted as "… local food, one that takes into account not just territoriality, but also a series of quality attributes such as agricultural production methods, fair farm labour practices and animal welfare" (Thompson et al., 2008 in Sonnino, 2016).

In the five North American cities analysed by Ilieva (2017) there is a good correlation with the goals of the food strategies and food-related indicators of 15 of the 17 SDGs (Table 1 in Ilieva, 2017). Two SDGs were not clearly represented: SDG 5 on gender equality and SDG 13 on climate action (Ilieva, 2017).

5. The relationship between the urban food system strategies and pathways towards sustainability

It was found in a recent survey and analysis of sustainability transition pathways that the *Transition Movements* narrative has the widest and most complete concordance with the UN-SDGs (IPBES, 2018: chapter 5). In addition to what is stated in section 3 above, the *Transition Movements* pathways (IPBES, 2018: 837) can be subdivided into two groups:

Resource-sparing lifestyle pathways that emphasise change in dietary and overall consumption patterns. These changes are associated with innovative land use/management such as agro-ecological methods, including organic agriculture, possibly also in coexistence with more intensive production regionally. Other changes suggest radically reduced energy consumption and a new urban spatial structure and planning. All these changes in lifestyles are intended to have beneficial effects for biodiversity at specie, habitat and landscape levels.

Transformation capabilities pathways that mostly emphasise the role of local empowerment, deliberation and social cohesion for achieving diversified, sustainable land use and livelihood strategies at the sub-regional scale. As such, they do not target the transformation of lifestyles or economic growth *per se*, but nevertheless share many actions of resource-sparing pathways regarding the quality of life as a secondary effect of social changes. Some Transition Movement pathway studies, dealing with sustainability transitions, highlight rules safeguarding access to resources for vulnerable groups (e.g., Videira et al., 2014).

The elements extracted from the urban food system strategies and their classifications into SDGs correspond well to the elements in the Transition Movements pathways expressed as: "innovative land use/management such as agro-ecological methods, including organic agriculture; radically reduced energy consumption; new urban spatial structure and planning; changes in lifestyles; local empowerment, deliberation and social cohesion; diversified, sustainable land use; livelihood strategies at the sub-regional scale" (from Transition Movements pathways, in: IPBES, 2018: 837). Those elements can be linked to elements listed in section 4 above—the major actions suggested—and belonging to SDGs: 2, 8, 9, 10, 11 and 15. The cross-sectorial characteristics of the food issues come out quite clear.

6. The urban challenges and the food system strategy work in Gothenburg, Sweden

One of the major challenges for urban sustainability in Gothenburg is the segregation among different groups of residents in the city (Eriksson et

al., 2017). The integration challenge deals with the question of how to achieve equal access to good life factors, such as housings, education, jobs, health, and fresh and healthy food. Also important in the integration challenge are participation in community development and democratic activities building social cohesion. A number of strategies and action plans are addressing different aspects of those challenges. This is also valid for the ongoing work on an urban food system strategy for the city.

The particular preconditions in Gothenburg with respect to the food system strategy work are:

- The city's ownership of 6000 ha of agricultural land within the municipality; potential for urban and peri-urban food production;
- Urban gardening and urban agriculture activities organised by local communities in collaboration with the city administration and NGOs;
- Community Supported Agriculture (CSAs) with support from the city administration;
- The city's location within a region with diversified environmental resources from fertile arable land, forests, marine and freshwaters, coasts;
- The city's location within a region with long history of diversified food production;
- The peri-urban part of the region (GR) <70 km has 13 municipalities; the rural part of the region (VGR) <200 km, has 49 municipalities with a number of small and medium-sized towns—the region offers resources and infrastructure; large interest among municipalities in collaboration in food system activities;
- Diversified and hitherto untapped knowledge base among immigrants on food production, agronomy, niche production, food cultures, culinary specialities, food business;
- New establishment of a regional college (*Naturbruksgymnasium*) specialising in sustainable use of natural resources and food in a residential area with many immigrants;
- Research activities at two associated universities: the University of Gothenburg and Chalmers University of Technology;
- The EU-sponsored project *Stadslandet* (Urban-Rural Gothenburg), a collaborative effort of the City of Gothenburg and the European Development Fund, run by *Utveckling Nordost* (Development North-East); the work is performed by local city councils and Business Region Gothenburg (non-profit subsidiary of the City of Gothenburg), and activities include food production with integrational aspirations;
- A designated regional area for sustainable development comprising four municipalities along an urban-rural gradient (the municipalities of Gothenburg, Lerum, Alingsås and Essunga, integrated through the development project *LAB190*); food system activities are of particular importance (cf. Nilsson, Ohlén, 2018);
- A research–policy platform, Mistra Urban Futures (MUF) in Gothenburg connecting researchers and practitioners on a diversity of urban development issues;
- 'Urban Food network', a local transdisciplinary network coordinated by Mistra Urban Futures (MUF) dedicated to food system issues: the network consists of researchers and practitioners related to various food issues, actively supporting the emerging food system strategy.

The general directives for the ongoing work on the urban food system strategy for Gothenburg have been made public. This includes: a) information support for local politicians in order to formulate incentives for food production, food consumption and food waste with the goal to promote human and environmental health; linking the plan to UN SDGs; b) the five foci areas for the work: local food production and –processing; food consumption (and waste); nutrient circulation and resource effectivity; distribution and logistics; water as food resources. There is no information on the ambitions of the urban food strategy to link urban and rural areas. However, since the directive points out the need relating the work to SDGs, creating links between urban and rural is crucial, as shown in sections 4 and 5.

The circumstances for arriving at an integrative urban food system plan and strategy seem to be very favourable due to active engagement from governmental offices both in the city and in many munic-

ipalities in the VGR region, the commitment from research institutions, local communities, NGOs and commercial entities (Business Region Gothenburg). The timing (2018) is also perfect, since comparative results on food system planning from other urban regions are available (Sonnino, 2016; Ilieva, 2017; Olsson, this paper).

The two SDGs that emerged as disregarded in the study of Ilieva (2017), SDG 5 Gender equality and SDG 13 Climate action, are highly probable to be incorporated in Gothenburg since: a) the segregation challenge that is important in Gothenburg includes the intersectional issue of gender; b) work on the mitigation of and adaptation to climate warming is vibrant in the city.

7. What about the urban food system strategies as vehicles for sustainability transitions?

How can the emerging urban food system be used for tackling the major urban challenge in Gothenburg? Segregation can be expressed as social, economic and environmental inequality, and according to Kolb (2015) there is a correlation between social and environmental inequalities. Immigrants are often an underprivileged group suffering from low economic, cultural and social integration. The high unemployment rate in this group is worsening the situation and increasing the segregation gap and thereby continually decreasing social sustainability of the city. These inequalities come together with issues of unequal capacity for participation in communication with public authorities and in community-organized activities for the transformation of living conditions. This leads to increasing mistrust between groups and elevated social unrest as has been observed in Gothenburg (Eriksson et al., 2017).

The city is currently proceeding with a number of activities related to food systems. Those include activities built on local participation with community groups, e.g., land made available by the city for food cultivation for private consumption or for the establishment of new restaurants with a culinary touch of different immigrant cultures; food business activities like catering with a cultural culinary touch; niche production of spices; the planned establishment of a Nature Farming College (*Naturbruksgymnasium*) with a food theme in a suburb dominated by immigrants (Isemo, 2018). Those food system activities have the potential to boost development towards better integration and thereby work in the direction of increasing urban sustainability. Food-related practices are considered activities that can mediate boundary crossing between different cultures, but also between different societal actors (local government, researchers, farmers, food stores, and restaurants), socio-economic groups and generations. The food system activities could be used for creating, designing and supporting so-called vital coalitions through new forms of governance (Montin et al., 2014). Additionally, there is a multitude of participatory activities in the local transition movements in Gothenburg (Omställning Göteborg, 2018). This array of participatory activities with a food system theme can act as 'seeds' for transition processes (Bennett et al., 2016).

Central in the urban sustainability transition is the (re-)establishment of the urban-rural linkages via the urban food system. The preconditions are favourable in the Gothenburg region, with interest in such a development expressed by several rural municipalities and successful agricultural and food businesses in the region with an aim to address the big consumer group in the city. An international overview of 'City region food systems linking urban and rural areas for sustainable and resilient development' (Dubbeling et al., 2016) provides examples from cities in the Global North and South on how the food systems can generate political support for the wider urban-rural linkages through coalitions built on food. City Region Food Systems are vital for the implementation of the United Nations New Urban Agenda (United Nations, 2015) and specifically linking SDG 2 (food security and sustainable agriculture), SDG 11 (sustainable cities and communities) and SDG 12 (sustainable production and consumption).

If the Gothenburg region in its greater extent with 49 municipalities was considered as a 'foodshed' (Peters et al., 2009) for all its inhabitants, it would have wide implications for the development of urban-rural links (Olsson et al., 2016). A number of new food-related businesses could devel-

op focused around the 'local' brand and the need for development of new logistics and distribution systems would give room for innovative solutions. Meat production in the region based on grazing and browsing of livestock on non-ploughed rangeland would recreate and restore the extant outlands that were the basis for meat production before the current largescale meat import from other parts of the world (Swedish Agricultural Agency, 2016; Olsson, 2018b) and the connected dependence on the global food system. In contrast, regional production systems would have profound landscape and ecosystem repercussions with positive development and expansion of biodiversity and several organisms that are threatened by decline and extinction in the processes of forest overgrowing of abandoned agricultural landscapes.

Such a development would, according to Marsden and Sonnino (2012: 428), create "a new counter-paradigm of (urban and rural) place-based strategies that is becoming a significant counterforce to the global intensive food agenda." The possibility of developing and refining such efforts was recently demonstrated by Zasada et al. (2018) by creating urban food system plans and models tailored for different diet scenarios and local production conditions ('metropolitan foodshed' and self-sufficiency scenarios).

8. Conclusions

This paper explored the possibilities of using urban food strategies as tools for sustainability transitions of societies. In line with this aim, content analysis was conducted on two recent surveys of urban food strategies. First, links between the content and the United Nations Global Sustainable Development Goals (SDGs) were established by classifying the occurrence of text to any of the SDGs in the food strategies. Second, relations and utility in the transition work was assessed. The paper also discussed the particular preconditions and possibilities for using an emerging urban food strategy for sustainability transition in the Swedish city of Gothenburg.

In the analysed food system strategies there is an evident concordance with the sustainable development goals that relates to the social (SDGs 2, 9, 10 and 11), economic (SDGs 2, 8, 9 and 11) and environmental dimensions (SDGs 2 and 15). Ilieva (2017) found concordance with 15 of the 17 SDGs in her in-depth study of five urban food strategies. Thus, the interdisciplinary and cross-SDGs attributes of the food system issues are apparent.

Urban food systems and sustainability transitions?

Sustainability transition pathways were compiled by the Intergovernmental Platform for Biodiversity and Ecosystem Services (IPBES, 2018). The *Transition Movements* pathway narrative has the most complete concordance with the different Sustainable Development Goals (IPBES, 2018: 837). The elements extracted from the urban food system strategies correspond well with the elements in the Transition Movements pathways and include food system impacts on, e.g., life style and consumption, diversified land use, agro-ecological production methods, decreased energy consumption, urban-rural planning, local empowerment, social cohesion, livelihood strategies at the sub-regional scale. This would be accomplished by linking urban-rural regions via policies, planning and reorientation of farm subsidies that reconnects the regions and by a number of opportunities related to food system activities. This includes branding of the 'local' for production of different food products and would involve innovations, e.g., from new distribution systems and consumer participation, and stimulate economic growth in the peri-urban and rural regions. Those actions have wider implications for the organisation of the society than merely the food issues. Thus, it emerges that the food system strategies and plans can be tools in the sustainability transition efforts for obtaining the 2030 sustainable development goals.

Particular conditions in Gothenburg?

In Gothenburg, the current setting is favourable with an array of local conditions outlined in this paper that would make the emerging food system plan a useful tool in the current struggle against several challenges threatening urban sustainability.

It is satisfactory to note that the two SGDs that were noted as neglected in Ilieva's study (2017), SDG 5 Gender equality and SDG 13 Climate action, will most probably be well covered in Gothenburg since the segregation challenge that is exceptionally important in Gothenburg includes the intersectional issue of gender, and work on the mitigation of and adaptation to climate warming is vibrant in the city. The evident engagement and interest from the city of Gothenburg and from several municipalities in local food activities, combined with the Gothenburg region's dedication to sustainable development (Nilsson et al., 2018), give the region unique prerequisites for innovative development of the urban food strategy with large potential for the sustainability transition efforts.

To summarise, this study has indicated that recent urban food strategies and plans with sustainability ambitions are embracing a number of Sustainable Development Goals in the environmental, social, economic and equity dimensions. As elaborated above, this is a characteristic of the *Transition Movements* pathway for sustainability transitions. The utility of food strategies in the work with sustainability transition, hence, seems inevitable (2).

Notes

(1) Non GDP-growth means alternatives to the market-driven economic growth paradigm; see Whitehead, (2013).

(2) This article is part of the 40th issue of *Bulletin of Geography. Socio-economic Series* entitled "Sustainability—differently", edited by Mirek Dymitrow and Keith Halfacree (Dymitrow, Halfacree, 2018).

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