6 Action research as a tool to measure progress in sustainable food cities

Enacting reflexive governance principles to develop indicators

Ana Moragues-Faus

Introduction

In the context of rapid urbanization, increasing socio-economic inequality and accelerating ecological degradation (Godfray et al., 2010; OECD, 2015), cities are recognizing the urgent need to transform food systems to deliver health and well-being, prosperity and equity, and conserve and enhance natural resources. Indeed, an increasing number of cities around the world are now adopting collaborative and cross-sector approaches that use food as a primary vehicle for delivering positive social, economic, and environmental outcomes (Moragues-Faus, 2017d; see also Chapters 5, 8, 9, 10, & 11, this volume).

In the last few years, there has been an increasing interest by practitioners and academics alike to measure the impact of urban food policies and associated initiatives. Recent exercises include a mixture of local, national, and international processes that aim to measure progress in individual cities around the delivery of sustainability and food security outcomes (Tanguay et al., 2010; Sustainable Development Solutions Network, 2015; RUAF, 2016; Landert et al., 2017). However, food system assessments face a number of challenges to become effective tools for food system transformation, from the need to critically examine how knowledge is produced and the conflicting interests between stakeholders, to the lack of data or the multi-scalar usefulness of specific indicators (Alrøe et al., 2016; Carlsson et al., 2017; also see Chapter 6, this volume). To address some of these challenges, this chapter explores the potential role of action research (AR) – and particularly co-productive and reflective practices – in developing these measurements (see also Chapters 2, 3, 4, & 10, this volume). For that purpose, I rely on an action research process conducted by Cardiff University and the Sustainable Food Cities network – an initiative made up of 55 urban food partnerships across the UK. The research process involved more than 100 sector experts and practitioners to develop a place-based indicators toolbox to measure progress and inspire action.

The remainder of the chapter is structured as follows. The second section presents a literature review on food system assessments in order to identify

key challenges in the field and discuss how action research processes can contribute to address key concerns. The third section discusses the action research process and its main outputs. The fourth section analyses how co-productive and reflective practices were implemented throughout the research processes and resulted in a flexible, participative, horizontal, and place-based approach to develop food system assessments. The analysis leads to an examination of the benefits and limitations of this particular research process. Finally, the chapter concludes by highlighting how critical and reflexive governance principles can be applied to the development of food assessments as well as other research processes to progress conceptual debates and the material construction of more sustainable food systems (see also Chapters 5 & 11, this volume).

Literature review on food system assessments: towards participatory processes

There is an ever-increasing number of exercises evaluating the performance of food systems. A recent review of sustainability assessments in the food sector revealed the diversity of purposes that these tools serve, including: conducting research and collecting data; providing advice to different actors such as policymakers, consumers, or farmers; monitoring specific activities such as farmers' certification, self-assessment, or landscape planning (Schader et al., 2014). In many instances, these exercises focus on one dimension of sustainability – such as studies on planetary boundaries (Conijn et al., 2018), or one aspect of the food chain – for example, organic agriculture (Underwood et al., 2011). However, in this research process it was particularly important to take a holistic approach to food system reform, which embraces the horizontal and vertical dimensions of the food system (Moragues-Faus et al., 2013). Horizontally, a holistic food system includes different policy domains such as health and well-being, environment, economy and community development, social and cultural aspects, and education. The vertical dimension refers to all stages of the food system from food production, processing and storage to transport, retail, consumption, and waste.

While sustainability looms large as the main focus of food assessments (see FAO, 2014; Dubbeling et al., 2017), other concepts are also being mobilized that similarly adopt a holistic food system perspective, such as resilience of the global food system (Seekell et al., 2017), sustainable nutrition security (Gustafson et al., 2016), agroecology (Hatt et al., 2016), sustainable intensification (Mahon et al., 2017), food security (Ingram, 2011) or sustainable diets (Johnston et al., 2014). Many of these exercises highlight key areas of concern or dimensions that food assessments need to incorporate in their analysis. Nevertheless, few of these more holistic accounts of food systems actually provide specific indicators to guide data collection (see exceptions such as FAO, 2014; Gustafson et al., 2016).

Holistic evaluations of urban food system assessments are still scarce (Prosperi, Moragues-Faus et al., 2015). The separation of the dimensions of sustainable urban development hinders the ability of most systems to accurately understand broad movements towards sustainability (Lynch et al., 2011). To date, an important part of the urban food literature has concentrated on evaluating specific activities, such as the contribution of urban agriculture to sustainability (Hanson & Schrader, 2014). However, recent works are taking a more holistic approach to evaluating progress in building more sustainable urban food systems (see, for example, Ilieva, 2017; Landert et al., 2017). For instance, efforts have been directed towards assessing and planning city region food systems (Dubbeling et al., 2017). As part of this process, the International Resource Centre on Food Security and Agriculture (RUAF), the Food and Agriculture Organisation (FAO), and Wilfrid Laurier University have developed an indicator framework to assess and monitor different dimensions and goals of a sustainable city region food system.¹ As this exercise and the case study presented here show, practitioners and international institutions are driving the need for these exercises. For example, the Milan Food Policy Pact Secretariat – a protocol signed by more than 160 city Mayors across the globe to build sustainable urban food systems – is also developing a framework to monitor progress in signature cities.²

There has been a clear evolution not only in the content of food system assessments towards more holistic understandings of sustainability dynamics, but also in reformulating the purpose and processes inherent to evaluating food systems. However, more critical reflection is needed on how knowledge is created, codified, and used in sustainability assessment exercises. The literature reveals a set of challenges in conducting food system assessments (see (Hiremath et al., 2013; Alrøe et al., 2016, 2017; Carlsson et al., 2017), mainly:

1. *How to balance different types of knowledge.* This is particularly relevant first, to avoid the most widely used or easiest ways to measure dimensions of sustainability getting the most weight; and second, to include different knowledges and experiences when representing contested sustainability views (Moragues-Faus & Marsden, 2017).
2. *How to expose the values mobilized through assessment exercises and related choices.* In order to actually address sustainability criteria, exercises should reflect on how they relate to the ethical principles of sustainable food systems as well as how they deal with the interests of different stakeholders (Moragues-Faus et al., 2017). Working through sustainable food challenges and trade-offs necessarily requires addressing not only the power imbalances configuring the contemporary food system, but also those at play in developing assessment frameworks. Examples range from who is invited, who has the time and resources to participate, or what type of knowledges/experiences are

regarded as legitimate (i.e. those based on ‘scientific’ evidence). Taking a participatory perspective, from problem definition to the identification of goals and the development of solutions, can be instrumental in exposing these variegated interests and capacities at play (Travers, 1997; Irøe et al., 2017), as well as providing a platform to voice the needs and lived experiences of those relegated to the margins of the food system.

3. *How to develop, implement, and communicate food system assessments in a way that effectively contributes to the development of more sustainable food systems.* Among others, food system assessment exercises should be relevant for practitioners and local communities and allow for capturing specific place-based relations between different social, economic, and environmental sustainability dimensions. Nevertheless, connecting these local specificities to regional and global processes constitutes a key step towards representing the multilevel dynamics resulting in different sustainability and food security outcomes across the globe.

Action research and participatory processes can be instrumental in overcoming some of these challenges. Action research is broadly defined as

a participatory, democratic process concerned with developing practical knowing in the pursuit of worthwhile human purposes ... It seeks to bring together action and reflection, theory and practice, in participation with others, in the pursuit of practical solutions to issues of pressing concern to people, and more generally the flourishing of individual persons and their communities.

(Reason & Bradbury, 2008, p. 2)

In this manuscript, we focus on two key concepts inherent to action research processes: co-production and reflective practices.

First, the notion of *co-production* has become a key word in critical social sciences. Its use ranges from emphasizing how nature and society are co-productive of one another, to highlighting how emancipatory processes of knowledge creation necessarily involve different agents, experiences, and world views (Swyngedouw, 1999; Leff, 2015; Moragues-Faus & Marsden, 2017). In the social innovation literature, co-production is broadly defined as an active involvement of citizens and professionals in the production process of policies and knowledge (Verschuere et al., 2012). In a recent systematic review of the literature on co-production, Voorberg et al. (2015) identify three degrees of citizen involvement: citizens as co-implementers, as co-designers, or as initiators (see also Chapters 3 & 7, this volume).

Second, *reflective practices* constitute a keystone of action research processes. This literature identifies three modes of reflective practices (Kemmis & McTaggart, 2005; Bjorn & Boulus, 2011): first-person action

research, which highlights the participants' ability to develop a critical approach to research practice and her/his way of being in the world; second-person research, which brings participants together to discuss shared concerns; and third-person research, where the inquiry is extended to large groups with lower levels of engagement and communication. Recently, the food studies literature has also highlighted the importance of these practices by championing reflexive governance as an approach that can open spaces for learning and adapting social solutions to collectively resolve food insecurities and sustainability challenges (Rocha, 2009; Pereira & Ruysenaar, 2012; Marsden, 2013). The central argument within this approach is that, through self- and social questioning (reflexivity), people are able to engage with the contemporary uncertainties, conflicts, inequalities, and complexities that characterize food systems (Edwards et al., 2002; Moragues-Faus et al., 2017).

In this chapter, I analyse different modes of co-production and reflective practices mobilized to conceptualize and measure progress towards sustainability in urban food systems. Ultimately, this exercise will allow us to understand how action research might contribute to addressing key challenges in the development of food assessment exercises, mainly: integrating different types of knowledge, addressing conflicting values and interests, and contributing to food system transformation.

A participatory approach to assess sustainable food systems: the case of the Sustainable Food Cities Network

The Sustainable Food Cities Network (SFCN) is a partnership project that brings together public, private, and third sector organizations that believe in the power of food as a vehicle for driving positive social change and therefore are committed to promoting sustainable food for the benefit of people and the planet. The project is coordinated by three pioneering UK NGOs: the Soil Association, Sustain, and Food Matters. In 2011, the SFCN was launched with five UK urban food policy pioneers: Bristol, Plymouth, Brighton, London, and Manchester. At the moment, the network convenes in 55 places across the UK with the goal of sharing challenges, exploring practical solutions, and developing best practices in all aspects of sustainable food. The SFCN thus constitutes a unique experience to scale up and out urban food strategies, by providing the network with the capacity to forge trans-local alliances to intervene in national food policy arenas as well as contribute to spreading good practice across UK local areas. For that purpose, it has developed a set of activities, mainly: communication platforms, networking events, campaigns, tools to share experience and training, funding schemes for members, and an awards system (Moragues-Faus, 2017a).

In order to expand this work, the SFCN was particularly interested in measuring progress towards sustainability in cities for three main reasons.

First, the SFCN promotes a holistic approach to food system reform by working across sectors and with different actors through food partnerships. While this multi-actor and cross-sectoral approach is increasingly adopted in urban food policies worldwide (Moragues-Faus & Morgan, 2015), understanding the impact of this collaborative approach on sustainability outcomes remains a shared challenge (Clark et al., 2015). Consequently, an assessment framework that shows the connections and synergies between sectors and actors can contribute to supporting more holistic and participatory interventions in the food system. Project participants were particularly interested in highlighting, through a common framework, collective efforts towards improving sustainability outcomes by reshaping urban foodscapes. Second, developing a holistic assessment framework, underpinned by shared definitions and measurements of ‘progress’, can help to improve and guide the development of effective urban food strategies as well as contribute to identifying gaps and inform decision-making. At the same time, an assessment framework can embrace a place-based but not place-restricted approach, by collecting experiences from different geographies and providing a flexible tool that avoids prescriptive or blanket approaches to food system reform. This is particularly important in a context of austerity that requires prioritization of actions. Finally, it is necessary to provide evidence of how holistic and collaborative approaches to urban food transformation, as well as specific food initiatives, result in sustainability and food security outcomes. This includes compiling experiences and lessons learned from different geographies. Robust evidence can also be instrumental in attracting new institutions and sources of funding to support and strengthen food partnerships.

Taken together, these motivations led to the development of the action research project analysed in this chapter. This action research process was co-designed between a Cardiff University researcher and SFCN coordinators and consisted of five steps described below.

1. *A review of both academic and ‘grey’ literature:* This exercise allowed us to identify the range of indicators used to measure the environmental, social, and economic sustainability of urban food strategies. This review was published on the SFCN website (Prosperi et al., 2015) and contributed to framing the participatory workshops.
2. *Participatory workshops:* We organized five workshops to define what constitutes success for an urban food strategy and to select the most relevant indicators that can guide action towards that goal. The workshops were organized geographically (Cardiff, London, Edinburgh, and two in Liverpool) in order to grasp spatial issues that might affect involvement with urban food policies at the national level (in the UK as a whole, but also Wales and Scotland) and maximize city governments’ and civil society organizations’ participation in the process. Participants from all the SFCN partnerships were invited to these meetings. A total of 99

stakeholders from 41 different places participated in these workshops, including policymakers (32), civil society organizations (40), private sector (6), and academics (21). The workshops consisted of the following steps:

- a. Visioning: Collective definition of a sustainable food city.
 - b. Discussing and agreeing on key concepts: After presenting key findings from the literature review an overall framework was agreed. This included a combination of a theme-based framework and a logic framework (see Figure 6.1). The themes selected align with the broad dimensions of sustainability: economic, health and well-being, environment, and governance. The logical framework defines four levels: goals (i.e. overarching aim, ultimately what we want to achieve), outcomes (a state or position which is reached in order to achieve the goal), indicators (a measure of progress towards delivery of an outcome which shows an increase/improvement/change in movement in a relevant and measurable parameter) and activities (an action that is carried out or a step that is taken to contribute to delivering specific outcomes). Also, a set of key criteria to select the indicators was also agreed upon in each workshop using the SMART model (Specific, Measurable, Achievable, Realistic, and Time-related).
 - c. Defining outcomes and indicators for each dimension: Using the results from the visioning exercise around a sustainable food city, participants defined specific outcomes and indicators for each sustainability dimension.
 - d. Prioritization of indicators by mobilizing agreed criteria: Participants reflected on the usefulness of indicators according to the criteria previously defined.
3. *Verification of the feasibility and coherence of the selected indicators:* The results of the workshop were complemented with relevant literature, previous experience and case studies from the SFCN, and insights from meetings and interviews with local and national policymakers. After this initial feedback, SFCN coordinators and the lead researcher prepared a document for consultation that included the toolbox and that was shared widely through the SFCN (see Moragues-Faus et al., 2016). At the UK level, we received written feedback from public health officials, city councils, and civil society organizations. Furthermore, a webinar with 42 attendees and a workshop with academics and practitioners in London were conducted to gather further feedback. In total, more than 70 participants provided comments to refine the indicators toolbox.
 4. *Application of the toolbox:* The set of indicators identified was applied in Bristol and Cardiff, two cities involved in the network. This step included gathering information from different institutions and databases produced in the last five years to feed the indicators and record the impact of specific policies and interventions. Data collection was carried

out in collaboration with local authorities and civil society organizations through requests of information to key informants on specific topics. The results provided a substantial and unique contribution to ongoing efforts to measure the impact of urban food strategies and contribute to refining further the indicators toolbox.

- 5. *Dissemination*: Dissemination has occurred throughout the project through participation in events and conferences, website communication, social media, and webinars.

The main output of this process is a toolbox for action that has two main purposes. First, to provide practitioners – and particularly local governments, policymakers, and public health decision makers – with a comprehensive collation of relevant evidence and indicators of success of a place-based approach to food. Second, to assist practitioners to plan, implement, monitor, and evaluate the impact of urban food strategies. The toolbox presents a framework that is sufficiently flexible to account for differing local circumstances and priorities. This place-based approach to assess progress in urban food systems towards sustainability is represented in Figure 6.1. Table 6.1 shows an example of how this toolbox can be implemented.

SUSTAINABILITY GOALS	GOVERNANCE	HEALTH AND WELL-BEING	ECONOMY	ENVIRONMENT
OUTCOME-BASED INDICATORS				
LEVERS FOR CHANGE (Activity-based indicators)		PARTNERSHIPS & COLLABORATION		
		POLICIES & STRATEGIES		
		INFRASTRUCTURE		
		PUBLIC SERVICES & SUPPORT		
		KNOWLEDGE & AWARENESS		
		MARKET-BASED MECHANISMS		
EVIDENCE	PUBLISHED RESEARCH, ADVISORY DOCUMENTS & CASE STUDIES			

Figure 6.1 Framework to measure progress in sustainable food systems.

Source: (Moragues-Faus et al., 2016).

Note: The levers and associated activities have not been ranked in terms of importance.

Table 6.1 Examples of the application of the toolbox

<i>Elements of the toolbox</i>	<i>Examples for Health and Well-being</i>
Sustainability goals	Improving physical and mental health and well-being by reducing food poverty; improving access to affordable healthy food; promoting healthy weight and healthy diets; and increasing participation in food-related physical and social activity.
Outcomes (meta-indicators)	Decrease in the number of people overweight or obese.
Activities classified in 6 levers of change (Proxy indicators)	Example from lever market-based mechanisms: More healthy options are available in supermarkets, convenience stores, restaurants, takeaways, cafes, vending machines, and catering settings.
Evidence	<p><i>Example of supporting evidence from grey and scientific literature</i></p> <p>Reference: The Food Foundation. January 2016. 'Force-Fed. Does the food system constrict healthy choices for typical British families?' The Food Foundation.</p> <p>The report studies the extent to which unhealthy eating patterns are becoming more common as we increasingly 'eat out'. In addition to planning regulations to limit the number of fast food outlets (mentioned above), the report recommends many other measures to 'incentivize food service providers to provide healthier food'. These include 'setting upper limits for the formulation of processed foods' for specific nutrients; making Government Buying Standards mandatory for all public procurement; using VAT to support healthy choices; increasing school meal uptake and improving food in schools and workplaces (pp. 27, 35).</p> <p><i>Example of supporting evidence: Case Study</i></p> <p>A shop offering healthy fast food has been opened with the help of Haringey Council (p. 7). The Council is supporting local youngsters to choose a better option by investing in a not-for-profit social enterprise that offers a tasty, healthier alternative using free-range, local, and seasonal produce.</p>

Grounding co-productive and reflective practices

The action research process with the SFCN included co-productive and reflective practices. *Co-production* took place by involving practitioners as initiators, co-designers and co-implementers. First, the demand to conduct this research process emerged from SFCN facilitators, who were actively involved in evaluating the impact of the SFCN programme. Not only did these facilitators struggle to assess the impact of the overall programme, but individual cities also voiced the difficulty of measuring and communicating how specific food partnerships were contributing to deliver sustainability outcomes in their respective places.

Second, practitioners were *co-designers* of the research process and of the toolbox. The co-design of the research process included network facilitators from Food Matters, the Soil Association, and Sustain and also input from six food partnerships. These practitioners, together with researchers, constituted the core action research team and jointly developed the stages of the research project (described in the section, 'A participatory approach to assess sustainable food systems: the case of the Sustainable Food Cities Network'). This included the design and delivery of workshops, collection and analysis of data and feedback, participation in dissemination activities, and writing up results. Consequently, decision-making throughout the research process was collaborative. This was made possible by an early alignment of values between researchers and practitioners to guide the research process. These values are closely linked to key principles of action research and reflexive governance as discussed below (see Dick, 2002; Lenoble & De Schutter, 2010), mainly: flexibility, inclusivity and participation, horizontality, and contribution to social change as an overarching goal.

A key aspect of this research process was to develop a flexible and responsive approach to the research design as well as the outputs to confer adaptive capacity to changing organizational but also personal circumstances. Indeed, throughout the research project, personal and professional circumstances, such as a member of staff leaving the organization, led to changes in the team and reorganization of the timetable. This flexibility was underpinned by trust and open communication amongst the core team members.

Similarly, the core action research team was committed to ensuring inclusivity of different voices and needs within the SFCN membership. These participatory processes contribute to share and co-produce knowledge and information as well as build trust (IPES-Food, 2017). In this particular case, inclusion mechanisms comprised the development of participatory spaces such as workshops or webinars, involving local administrations, civil society organizations, public health practitioners, and local experts. Furthermore, the geographical spread of the workshop aimed to facilitate the participation of different actors and include their perspectives in the definition of a sustainable food city and associated measurements. This spatial and sectoral

inclusivity allowed us to develop a place-based approach to food system assessment where different cities and their contrasting urban food systems could be represented under a common umbrella. That is, participants working on different food challenges – from food poverty to carbon emissions, and under diverse circumstances – big/small cities with different levels of deprivation, informed the development of a common framework that at the same time reflected their needs and priorities. This is particularly important in a context where comparison amongst cities is on the rise, through a series of national and international awards and also monitoring exercises (Moragues-Faus, 2017d). A place-based approach can contribute to the acknowledgement of the current uneven urban foodscape, where cities greatly differ in terms of average household income or levels of civil society involvement (Moragues-Faus & Sonnino, 2018). Acknowledging these different social-ecological configurations of cities, and therefore their distinct capacities and limitations to transform the urban foodscape, is essential to avoid creating a competitive landscape of winning and losing cities. In this regard, not only the inclusion of diverse voices was important but also the incorporation of case studies developed by distinct cities as part of the toolbox's evidence base supporting specific interventions in urban foodscapes.

The research team was committed to developing inclusive spaces of participation but also to assuring meaningful participation of practitioners in decision-making arenas. For that purpose, and following action research principles (Borda & Rahman, 1991), the methodology sought to develop symmetrical, horizontal, or non-exploitative relations among participants. For example, this was achieved by ensuring participants were able to shape the process as well as the conceptual framework and the indicators. As described above, each workshop provided an opportunity for participants to define sustainability from scratch, identify what type of assessment is useful for their local area by defining criteria to select indicators, and actually identifying specific outcomes and associated indicators to measure them. In this line, the overall project was considered by the research core team as a tool to promote positive social change, by empowering cities in defining progress on sustainable food systems and supporting people's collective praxis. The compilation of sustainability discourses, indicators, and also case studies from across the UK that make up the toolbox illustrate this diversity and collaboration. This overarching aim guided the development of a flexible, participative, inclusive, horizontal, place-based, and transformative approach to develop food system assessments.

Finally, co-production practices also include the *implementation* of the toolbox by practitioners. A first pilot was conducted in Bristol and Cardiff, with local experts applying the framework. However, a user-friendly version is under development by the SFCN to support wider implementation.

Reflective practices were also integrated throughout the action research process. These practices were mostly restricted to second-person action

research involving the core research team made up of a Cardiff researcher and SFCN facilitators. In this regard, there were formal and informal spaces dedicated to reflecting on the process and related outputs. Activities to gather feedback at the end of every workshop and dissemination events also constituted a way to provide open spaces of deliberation and integrate third person action research within the process. For example, a planner provided the following feedback on the toolbox, 'This looks OK to me although I am disappointed our good practice publication for planners was not referenced'. On another line, a health practitioner stated, 'I think the draft document is extremely helpful and makes a lot of sense from my perspective working from within a local authority and making essential partnerships across the city to progress healthy and more sustainable food'.

Despite the benefits of this co-productive and place-based approach to food system assessment there are also key limitations and trade-offs that emerged throughout the process. First, the development of the indicators toolbox departed from the definition of sustainability, and adapted it to a particular context – UK cities. In every workshop, participants started responding to the broad question, 'what is a sustainable food city?', allowing for multiple perspectives to emerge and qualify sustainability. Responses were varied. For example, in Edinburgh participants were highly interested in governance aspects compared to other workshops. This reflects among others how the Scottish food policy context differs from UK dynamics. For instance, the Scottish government is actively engaged in addressing pressing challenges such as the right to food. Also, participants decided to focus on health and well-being as a way to encapsulate the social dimension of sustainability but also stressing the importance of health inequalities and related interventions in UK food strategies. Indeed, Public Health practitioners have been key actors shaping urban food policies in the UK in terms of content, activity, and leadership. This flexibility was instrumental in broadening participation in the definition of the framework, which assured the development of a tool that responds to people's needs and increased ownership of this resource by participants. While this exercise contributes to developing a useful toolbox that can be implemented in a specific local context, it might limit its applicability in other geographies as well as posit challenges in aligning changes at the local level with national and international dynamics and targets such as the Sustainable Development Goals. Indeed, grounding assessment frameworks on the needs and experiences of participants and potential users actively shapes those frameworks around specific challenges that might not be shared across geographies and constituencies, for example the key role that health plays in the SFCN toolbox in contrast with social dimensions of sustainability or cultural aspects.

Second, we devised a participative process with the aim to be inclusive. However, given the topic of the workshops, participation was informally restricted to those with interest and/or knowledge in measuring progress on sustainable food cities. The overall purpose of this framing was to build on

the experience and knowledge of diverse frontline practitioners rather than reinventing the wheel and developing from scratch the indicators that have already been used and implemented. However, this framing does limit the representation of different knowledges and sustainability practices that are seldom recognized in standardized indicators, assessment exercises, or even in mainstream sustainability discourses (Johnston et al., 2011; Moragues-Faus, 2017b). This failure to include a wider diversity of actors might contribute to reinforce partial accounts of sustainability where more powerful or better positioned stakeholders (e.g. highly educated white middle classes) set up the agenda. Inevitably, this posits key questions around the ultimate purpose of food assessment exercises and their transformative capacity, that is, how these assessments actually reify, shift, or empower particular framings and practices around food and sustainability.

Finally, this project, and particularly the application of the toolbox in Cardiff and Bristol, showed that it is extremely challenging to develop urban food-related indicators that are accessible, reliable, comprehensive, and inexpensive to collect. There are important data gaps in outcome-related indicators, particularly to characterize local food economies and the environmental impact of local food systems. Consequently, the process of selecting indicators includes navigating complex trade-offs. In this context, we sought to develop a useful, flexible toolbox that recognizes its limitations. In our case, some of the indicators are more accessible than others. For example, it is easy to monitor the decrease in the number of overweight or obese people, and more difficult to measure changes in the number of jobs in the local food economy. However, by including in the framework activities that can be implemented to deliver sustainability outcomes we aim to provide proxies that contribute to fill these information gaps. Nevertheless, the framework does not establish a direct causality link between the implementation of specific activities (i.e. healthier school meals) and specific outcomes (i.e. reduction on childhood obesity). This is due to the multiple causes involved in producing these outcomes (such as obesity) and the myriad processes shaping local foodscapes at the same time (e.g. increase of unhealthy take-aways around schools). Finally, this framework would also benefit from breaking down indicators in terms of neighbourhoods, gender, age, income, and ethnic background to account for the diversity within cities.

Conclusions: place-based, reflexive, and co-productive practices as a tool for social change

This chapter has analysed the action research process that led to the development of an indicators toolbox for sustainable food cities as a means to overcome key challenges in current food assessment exercises, these being mainly: inclusivity of different knowledges, addressing conflicting values and interests, and supporting food system transformation. In this regard, the combination of a systems approach to food sustainability and a place-based

perspective is a key contribution of this framework. Indeed, by collaboratively building a flexible framework, the toolbox succeeds in providing a non-prescriptive tool that accommodates the diversity of UK cities and recognizes that there are various pathways towards sustainability. In this line, the toolbox allows one to understand different contexts and progressive change by providing not only a fixed picture but also depicting the evolution of particular urban food systems. For that purpose, outcome-based indicators depict progress (increase/decrease) of particular trends, from malnutrition to the importance of local food business. This place awareness recognizes (and celebrates) differences in initial resources and capabilities of each place. The inclusion of voices from different sectors and geographies provides a flexible tool that encourages the ability to innovate and adapt to changing circumstances. This diversity is also reflected in the evidence base that supports the overall framework, which includes academic and grey literature but also specific case studies from across the UK. Furthermore, the framework not only assesses progress, but its implementation helps map current activities, connect different sectors and stakeholders in the city, and inspire action.

Despite the multiple contributions of this framework to address current food system assessment challenges, there are limitations that emerged throughout the process. These revolve around including visions and needs of a wider (and mostly underrepresented) set of stakeholders, unpacking the different power relations at play that condition the framing of food system assessments, and providing efficient and reliable measures that can be easily applied and communicated at different scales. While all knowledge is provisional and necessarily contextualized, it is also relevant to map the connections between different assessment exercises, as a means to reinforce a trans-local food movement based on sharing and co-producing knowledge (Blay-Palmer et al., 2016). The exercise discussed in this chapter takes a loose definition of local and urban, allowing food partnerships implementing the tool to define the boundaries. It also exemplifies how food assessments can contribute to scaling up and out good practices, by offering a tool to co-develop across local experiences within the same country and at the same time codifying knowledge to replicate and inspire action. This cross-scalar capacity and flexibility provides advantages but also requires further exploration of the interdependencies between places and scales. These interdependencies call for a further problematization of the role played by proximate but also distant foodscapes in configuring more or less sustainable places. Taken together, these limitations call for further experimentation of critical, participatory and reflective practices in the definition of frameworks and measurements.

Overall, the need to embed more critical, co-productive, and reflexive approaches within food assessment exercises mimics a wider call for implementing reflexive and participative governance principles in the food system to deliver food security and sustainability outcomes. Other chapters

in this volume reflecting on a myriad of case studies also stress this need to rethink governance processes in the development of sustainable food system assessments (see also Chapters 2, 3, 5, 8, 10, & 11, this volume). Reflexive governance entails addressing conflicting values and power imbalances as well as their implications in the food system (Moragues-Faus et al., 2017). But also, it requires an explicit examination of the genesis of these conflicting interests as well as the role that each actor plays in reproducing or hindering food system failures. It is therefore necessary to create the conditions for such processes to unfold, as Lenoble & De Schutter (2010) state:

This (...) requires not simply an environment that is empowering and facilitative, but also a transformation in the understanding of the actors themselves of how they should redefine their roles (...) This reflexivity may be understood as the ‘internalisation’ of the conditions of learning. Learning, in other terms, should be conceived as an operation in which the actors themselves redefine their understanding of the problem to be addressed, and are led not simply to question the solutions that are routinely explored, but also their relationship to the problem and the way they traditionally define their interests.

(p. 30)

The development of these critical, reflexive, and co-productive practices needs to expand from conceptual debates to permeate governance arenas and food system assessment exercises, but also research processes. After all, knowledge production and assessment frameworks constitute a powerful tool to frame debates and current food system challenges and potential solutions that constitute an integral part of the governance of food systems (Mooney & Hunt, 2009; Nally, 2014; Moragues-Faus, 2017c). In this context, we academics have the opportunity to surpass and enrich conceptual debates by committing to developing deliberative and collaborative research processes as a means to actively transform our food system.

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Notes

- 1 To access the toolkit and associated indicators see <http://www.fao.org/in-action/food-for-cities-programme/toolkit/introduction/en/>.
- 2 The Milan Food Policy Pact Indicators Framework can be accessed here: <http://www.milanurbanfoodpolicypact.org/milan-urban-food-policy-pact-monitoring-framework/>.

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