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EVALUATING SUSTAINABLE FOOD SYSTEM INNOVATIONS

A GLOBAL TOOLKIT FOR CITIES

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2 Urbal

A research project

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2.1 The evolution of the Urbal approach and related tools: The unfolding research process

In applying principles of participatory research to Urbal, we engaged in an iterative, co-created, loosely prescribed, and much adapted research process as we worked our way towards a place-based approach for mapping the changes and impacts from sustainable food system innovation and identified the outcomes, enablers, and impediments to sustainability impacts (Ceasar et al., 2017; Ciaccia et al., 2019; Faure et al., 2020; Tribaldos et al., 2020). We tested our draft approach in 16 case study Urban Food Innovation Labs (UFILs), adapting key features of the Urbal approach to ensure that it is relevant in the greatest diversity of contexts possible (Chapter 1).

The process of developing and refining the Urbal approach was iterative and engaged with both the insights and vision of and materials developed by the core research group and the activities of the UFILs. Initially, our vision, the Urbal guide, and supporting material were developed and refined by the core research team through online and in-person meetings and a test case UFIL. This process allowed us to continuously refine the Urbal approach and add new key components and information such as: 1) reviewing interview findings to narrow the activities to be considered at the workshop as the starting point for the impact pathway map; 2) providing a clear, defined role for experts; and, 3) incorporating participatory research processes in the Urbal approach to explicitly enable social inclusion and the consideration of relative power and voice for various participants in the UFILs. Building on the work of Bricas (2017), we reviewed and expanded the dimensions and sub-dimensions for sustainable food system considerations. We also worked to ensure that Urbal is adaptable to a diversity of contexts. Throughout the process we also held online webinars for Urbal participants to present guiding material to our UFILs teams and report their research findings. Simultaneously, each UFIL conducted their own Urbal process with new insights incorporated into the general methodological research as appropriate.

Urbal was then interrupted by the COVID-19 pandemic. While some UFILs had concluded their interview process (Step 1) and workshops (Step 2), several

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had not held public meetings and others were not yet part of the project. While this presented challenges, the onset of COVID-19 demonstrated the value of Urbal as a flexible and adaptable tool. In some cases, Urbal workshops were held online with minimal in-person interaction under these circumstances. Despite this, lively conversations and significant engagement took place online, highlighting the importance of having these discussions and opening the doors for engagement. In other cases, researchers held smaller in-person workshops that respected social distancing needs and/or conducted online focus groups and interviews. In two cases, academic researchers developed the impact pathway maps from existing data and then shared the maps for comment with innovators and practitioners.

2.1.1 Evolving terms of reference and lessons learned from the Urbal research process

The flexibility and iteration that is a hallmark of Urbal extended to the terms of reference for the project as they too evolved throughout the research. What became clear as the UFILs used the Urbal approach was the iteration that occurred between the steps and how, with each round, the information gained and understanding about the interaction between the innovation and sustainability deepened. For example, in Brasilia (Chapter 3) UFIL leaders used their literature review in Step 1 to determine relevant sustainability criteria for chefs and restaurants. This was then the basis to select restaurants for interviews based on their willingness to engage in sustainability and interview guides were developed and adapted to each group of key informants. Particularly notable changes in our terms of reference occurred for place-based considerations, sustainability dimensions in the context of food systems, innovation, and social innovation.

2.1.1.1 Place-based insights

The breadth of the case study selection themes (governance, value chain, and consumer practices) and the intended audiences (policymakers, funders, academics, and/or practitioners), makes Urbal widely relevant. This breadth also works well as a place-based approach to identify and develop relevant sustainability innovations. This proved to be the case as Urbal was trialed across the UFILs and resulted in unique findings and insights into the Urbal approach based on place-based interpretations of and alignment with Urbal. For example, in the case of Berlin (Chapter 8), the ECF-Farms had a start-up culture and goal of changing the way cities produce food but also the requirement to build a self-sustaining company that can compete in the marketplace. The openness and flexibility of the Urbal approach permitted unique findings to emerge for the ECF-Farm such as the need for more flexible regulations for specifics such as compost. At the time of the research, regulations required that fish waste be dumped so this source of nutrients was lost to the food cycle.

However, Urbal helped uncover that regulatory improvements permitting composting of the Yellow Perch fish waste from the ECF production cycle to produce usable fertilizer could help ECF become even more ecologically sustainable.

The relevance of Urbal as a useful place-specific approach also emerged for UFILs exploring the governance theme and raising important insights about the innovation to policy. In the case of the Agricultural Districts in Milan, "the existence of districts makes farmers more visible to other actors in the area, facilitating the creation of partnerships with institutions and civil society organisations in order to produce projects that develop and protect the territory" (Chapter 9, p. 183).

These particular territorial conditions allowed the UFIL participants to become active agents of change for regional and national policy as they were able to

> …reflect on the role of agricultural districts from the point of view of land governance: through the districts, farmers transcend their role as workers of the land and become protagonists of a proposal for a radical change in land use policies. The districts work to promote access to the tools and funds of the Common Agricultural Policies, provide technical support for the implementation of projects that have concrete effects on food production and distribution, and contribute to the maintenance and production of local environment and landscape. Their impact, measured [previously] from the merely econometric point of view, is still very limited and today the agricultural districts can be considered emerging actors that are playing a crucial role as innovators of metropolitan food systems governance, and forerunners of a change in progress.
>
> (Chapter 9, p. 184)

An important contribution of Urbal to the Mexico City UFIL (Chapter 4) was identifying the need to include producers in value chain considerations. Prior to Urbal, the innovators' focus was largely on food processors but engaging in the Urbal process allowed them to better understand that farmer's income is important to the viability of their supply chain, particularly as a point where interventions could increase sustainability. The Urbal approach helped uncover concerns about the fragility of relationships between food processors and producers in the region by providing a more complete picture of the supply chain and identifying possible pathways to help improve supply chain viability.

In the Cape Town UFIL (Chapter 10), the timelines developed as part of Urbal demonstrated how the different components of their project, Nourish to Flourish (N2F), aligned with and captured the iterative processes associated with the development of project outcomes. The flexibility and ease of using Urbal meant that, despite several impediments—including limited budgets, mandate disputes, contested policy and strategy development interactions, leadership changes, and conflicting views about who is responsible for food

and nutrition—it was possible to get the strategy accepted. As a result of initial Urbal consultations and follow-up processes, the N2F authors were asked to present the Urbal documents to the emerging Provincial Food Systems Working Group as an external, independent review. The Urbal researchers were then asked to draft a summary version of the Urbal Project Assessment Report that further supported the N2F consultation processes. The Urbal approach and methodological process supported the needs of the N2F strategy evolution and refinement from concept through to implementation in a mutually reinforcing and beneficial iterative process. As well as providing an operational framework for N2F, groups such as the City of Cape Town Food Working Group, the Western Cape Community of Practice and the Western Cape Food Forum all used the Urbal report as both an internal working document and to support their own processes of mandate deepening.

Urbal also enabled the development of methodologies adapted to the needs of each UFIL circumstances. For example, in the Milano Ristorazione UFIL (Chapter 6) for Step 1, the researchers tailored the approach so that they conducted semi-structured interviews and meetings with only two key informants. They then developed their own network map using a grid with the interest of stakeholders along one axis and power/influence along the other axis. The impact pathway map was then adjusted by academics following the workshop as participants found it challenging to identify the impacts of the relatively new innovation. As changes from the innovation had not been in place long enough to have lasting effects, in the end, they were able to identify potential or anticipated sustainability impacts.

2.1.1.2 Sustainability dimensions and food systems

The Urbal project began by framing the research so it combined both food systems *and* sustainability considerations. The food systems lens means that Urbal researchers looked across the various points along the food chain to include as many aspects as possible from seed to waste heap. While the project did begin with urban innovations, applying a food systems lens also led us to broaden the geographic scope and use a more territorial/regional focus.

At the beginning of the project, we used six sustainability dimensions, including food security, nutrition, governance, environment, social-cultural, and economic dimensions (Bricas, 2017). As we moved to the end of the pilot project research phase, we collapsed nutrition and food security into one 'health' category to provide a broader dimension for food systems analysis. Accordingly, the relevant sustainability dimensions and key sub-dimensions that emerged over the course of the Urbal project are:

1) **Health**: food security (access, quality, regularity), nutrition, well-being, physical activity
2) **Governance**: transparency, power dynamics, people's participation, accountability

3) **Environment**: protection of biodiversity, renewable resources, energy efficiency, climate resilience
4) **Social-cultural**: equity, community building, confidence in the system, positive expression of social and cultural identity, culture
5) **Economic**: equity, resilience, fair work and remuneration, local economies, circularity

The sub-dimensions listed are those that arose most prominently or frequently during the course of the research. However, the above list is not intended to be normative and the identification and use of other sub-dimensions are feasible and encouraged. It is important that users of Urbal ensure that the approach meets the needs and goals for each innovation being studied.
The features of a sustainable food system may vary according to regional or territorial contexts (Chapters 3–10). To reflect place- and context-specific considerations, each UFIL used the five-dimensional diagram to define and focus on their own definition of food system sustainability so that it reflected their values and objectives.

2.1.1.3 Innovation

Beginning with the idea that innovation is an umbrella term for initiatives that result in change, we developed an innovation typology to guide how we framed the Urbal project. This typology included a range of innovation characteristics used to select the UFILs to help ensure the widest diversity of UFILs within the project. Social innovation was a key consideration as we developed the Urbal project. This focus allowed us to begin to explore whether the innovation satisfied human needs, brought about changes to social relations through process, and/or increased levels of socio-political capability and access to resources (Kirwan et al., 2013). Another parameter was the type of actors leading the innovation, including whether innovations were led by individuals from civil society, the private sector, and/or by public authorities. Next, we considered who was impacted by the innovation and whether it was linked to consumer practices, value chain organization, or governance related to urban food policies. These categories were the basis for the three research themes previously discussed. Sustainability dimensions were taken into account and, as described in the previous section, included food security, nutrition, governance, environment, social-cultural, and economic at the outset of the research. We considered the presence of participatory approaches, classifying them as high or low to begin to include equity and power considerations. To ensure that Urbal would have global appeal at the end of the project, we considered location by global region, including Europe, Northern America, Latin America, Northern Africa, Sub-Saharan Africa, and Asia. Finally, we considered the progress of the innovation, including if the innovation was at the planning stage, newly launched and experimental, fully in service, or completed and focused on the dissemination of information and results. Not surprisingly, the

stage of innovation made a difference to the impact pathway mapping in that the more established the innovation, the more complex and detailed the impact pathway maps.

It is interesting to note that the innovations were not necessarily perceived as such by the innovators themselves. The purpose and vision of what was being done was sometimes unclear to the innovators, so Urbal was able to bring some precision to their processes. Other times, the innovation was a work in progress that Urbal helped fine-tune. For example, an innovation may have originated and be guided by innovators, such as in the Berlin UFIL (Chapter 8), where a private company had a clear vision for more localized, environmentally sustainable production of protein and greens. In other cases, that the innovation was less clearly specified was identified as part of the research at the outset with ideas being refined as the project evolved. This was the case of the Brasilia UFIL (Chapter 3) where the concept of sustainable gastronomy emerged as a framing research concept and was then refined more precisely as the project developed. In that case, the interview questions and the activities were easily aligned with sustainability goals as sustainability was a key consideration of the innovation at the outset. This led to the determination of specific sustainable gastronomic practices including the use of traditional food in menus and locally produced and/or organic food as well as waste minimization initiatives. The researchers also identified food activism and social inclusion as both emergent opportunities and challenges, particularly in terms of inclusion.

2.1.1.4 Social innovation

In addition to innovation as an umbrella concept, Urbal intentionally focused on different aspects of social innovation (SI). We grounded this work in Bouchard et al.'s definition of social innovation as:

> [A]n intervention initiated by social actors to fulfil an aspiration or need, provide a solution or seize an opportunity for action in order to modify social relations, transform a framework for action or propose new cultural orientations. From this perspective … social innovation aims to modify the institutional frameworks that shape relationships in society.
>
> (Bouchard et al., 2015, p. 9)

Social innovation generally involves social transformation based on the introduction of novelty into the established order. To identify UFILs engaged in a diverse range of social innovations to include in the Urbal project, we used Richez-Battesti et al.'s (2012) types for social innovations, in which social innovations can be: 1) tools to enable more responsive public policy with respect to social issues. In these cases, policy is shaped into new forms of interventions, usually based on public-private partnerships, such as the Projets Alimentaires Territoriaux in France, or, more generally, urban or territorial food

policies that engage multiple actors (see Cape Town UFIL, Chapter 10, p. 189) linked to social enterprises and entrepreneurs who implement market-oriented activities that both look for profit and social impacts such as the aquaponic firm in Berlin or restaurants in Brasilia (see Chapter 8); and 2) a multi-actor collective process, emerging to respond to unsatisfied social needs by the public sector or by the market or to put into effect a desired change. This category includes the La Cagette cooperative supermarket in Montpellier (Valette et al., 2022).

SI was a key focus for the Urbal initiative from the outset. There was a deep commitment to exploring dimensions of social innovation across nearly all the UFILs. However, given the range of UFILs themes, it was not possible to uniformly apply or prioritize SI. Despite this constraint, social dimensions were highlighted wherever possible including as a key facet of sustainability. In practice, and as supported in the literature (Juan et al., 2020; Klein & Laville, 2014), the idea of social innovation varied significantly between UFILs as SI development and operations are context specific. As a result, contextual differentiation was crucial for understanding each social innovation's priorities, practices, organizational structures, and activities (Konstantatos et al., 2013). A methodological consequence is that it became clear that the Urbal approach can help identify relevant contextual elements to understand the conditions for the emergence and evolution of social innovations including elements that facilitate and constrain the activities or implementation of the innovation (Bonomelli, 2018).

2.2 Lessons and insights from UFIL research

There was significant theoretical development as we evolved the Urbal approach and, as early as in our pilot phase, participants found that engaging in the process of data gathering, impact pathway mapping, and workshop planning, participation, and facilitation helped build capacity and dialogues that strengthened organizations and networks, helped develop quick and easy impact assessments, and significantly contributed to theoretical development of the project. In addition, the UFILs provided living labs where we could test and develop the Urbal process and its application. This iterative approach helped to make a range of sustainability challenges more obvious. In practice, Urbal case studies were not just an academic exercise. They also helped the multiple UFILs identify and address hurdles and, in many cases, find new ways to deal with challenges and surface successes to build on and celebrate.

2.2.1 Sustainable food system dimensions

A systems lens offers an opportunity to grasp the kaleidoscopic shifts between people and the environment as food circles and moves from seed to table to waste (Hipel et al., 2010; Morgan et al., 2008). Urbal brought specificity to the impact pathway mapping approach in the context of sustainability and food

systems combined by identifying how actual changes and impacts were the result of *sustainable* urban food system innovations. This was confirmed through the work in various UFILs. As researchers in the Cape Town UFIL observed about the impact pathway maps:

> [T]he interrelation, convergence, potential divergence between the various changes and pathways towards the different dimensions of sustainability, also build a systemic theory of change, emphasizing positive and negative feedback loops, unforeseen changes, and unforeseen contradictions between pathways, which we believe are particularly relevant to address the issue of the FSS [food system sustainability].
>
> (Chapter 10, p. 191)

Urbal helped to clarify the interconnectedness of sustainable food system dimensions as well as the need for careful assessment that helped avoid false assumptions (e.g., local equals more sustainable, Hinrichs, 2016; Born & Purcell, 2006). The combination of these two insights helped to generate realistic sustainability proposals for the future, an outcome that is of practical importance for many reasons. For example, researchers in the Milano Ristorazione (MiRi) UFIL (Chapter 6) explained that identifying logistical barriers and enablers with respect to the sustainability of the innovation allowed them to recommend concrete sustainability guidelines to be included in future contracts sent out for tender. In particular, the combination of sustainability and applying a systems lens helped them to clarify characteristics of sustainable food supply chains and how to determine ways to shorten the supply chain beyond simply geographical distance to include informational and relational proximity. Through the Urbal analysis, it was possible to identify ways logistics tenders could be used to enhance and/or monitor specific sustainability dimensions for the MiRi initiative using these three facets of sustainable food systems chains (distance, information, and relationships). These new sustainability considerations for tenders were specified as: 1) environmental, including alternative transportation options such as vehicle type; 2) food security, spelling out a commitment to regular and reliable food delivery; 3) improved social resilience through better working conditions; 4) more transparent accountability for delivery and carbon emissions; and 5) reduced inequity in the workplace. If taken up, these considerations could foster a more integrated and coherent approach to sustainable food systems.

In the Brasilia (Chapter 3) and Ma Cantine Autrement (Chapter 5) UFILs, this level of sustainability awareness focused the attention of participants on reducing food waste. In MCA, it raised the profile of reducing food waste in school canteens as part of environmental education. In Brasilia, this translated into a greater uptake of zero waste for restaurants as part of a circular economy. In the Mexico City UFIL (Chapter 4), the Urbal process helped to clarify the barriers that needed to be addressed to realize desired goals and impacts

making the multiple impediments and levers more apparent and also pointed to the points in their process where intervention could be beneficial, and noted that "[t]hanks to the [Urbal] methodology, we realized that the impacts of the initiative were directed towards upstream activities rather than downstream" (Chapter 4, p. 72). Understanding how to best intervene to bring about change helped the participants in the Mexico City UFIL focus their efforts on the points in the supply chain where they could make a difference. This complemented insights into whose food security was being addressed through the innovation and the capacity to consider that producer food security was potentially being undermined as they are linked into bigger food supply chains where they have less control.

In the Cape Town UFIL (Chapter 10), Urbal helped to situate the innovations within existing policy and governance considerations making it clear that sustainability dimensions are 'co-dependent' and "contingent on societal justice, wellbeing, equity, and cohesion" (p. 189, this book) with governance mediating societal needs as they relate to ecological and consumption considerations. Using the Urbal approach in Berlin (Chapter 8) allowed for an increased understanding about the ECF Farm as a sustainable urban food system innovation and helped reveal existing and potential sustainability dimensions. In the case of Ma Cantine Autrement, the impact pathway analysis brought to light sustainability impacts for all five dimensions and allowed Ma Cantine Autrement to identify relevant, place-based sub-dimensions (see Chapter 1, Box 1.1 and Chapter 5). The impact pathway approach allowed participants to understand more about the impediments to sustainability and helped to determine ways forward including conditions to enable and multiply success. Key among these enablers were: 1) better information so people could act in an informed manner; 2) motivating and empowering staff to act in more sustainable directions; and 3) finding ways to adapt the Ma Cantine Autrement programme to scale up to the territorial level.

In the Hanoi UFIL (Chapter 7), sustainability was interpolated from the research results not only as an explicit goal, but also as a way to build trust through the creation of increasingly robust social networks. Practically, this resulted in more efficient capacity with direct phone and email links between consumers and farmers, in addition to intermittent online platforms. This in turn helped foster better working conditions as online and new on-the-ground markets provided economic support for local farmers. These new value chains also added more direct supply chains helping to build greener, more diverse and participative territorial food systems. Also, at the intersection of environmental and health considerations, these innovations helped to provide safer quality food as it was produced with fewer chemicals which also meant a lighter environmental impact due to reduced reliance on fossil fuel based chemical inputs. These results provide insights about how to reinforce local goals, for example, how to build institutional and interpersonal capacity.

The COVID-19 pandemic made many existing food system deficiencies more apparent (Blay-Palmer et al., 2020) and the experiences in some Urbal

UFILs were no exception. For example, in the Cape Town UFIL, COVID-19 led some actors to engage with and understand the multiple connections for both food and non-food, between governance and sustainability dimensions. The Urbal approach made connections between governance and food security far clearer, and the reports generated became key tools used by the enablers of Nourish to Flourish when trying to engage other departments to join the Nourish to Flourish process:

> The Urbal work also clearly demonstrated the intersections between the Nourish to Flourish strategy and elements of a sustainable food system… cross scale collaborations [between the province and CT] and mutual cooperation were clearly evident thanks to the Urbal approach… As a methodology, the Urbal process served as a unique tool to both capture these processes, while at the same time, provided great utility to the innovators themselves both as an external validation of their novel and arguably, high risk, work, but the methodology was also assimilated into their working processes to support their lobbying and consensus building process. Supporting the constant work of maintaining the authorising environment, the Urbal process of documenting, but not assessing or judging, offered a particularly powerful tool to capture unique processes, to allow innovators to expose themselves and their work without the risk of critique, and to co-produce an assessment of the innovation. In the contested and at times highly politicised areas of governance and food systems politics the ability afforded by the Urbal process enabled a robust but open assessment of the innovation. Documenting sustainable food systems is essential if others are to be able to replicate and the work of food system innovators. If this process can both document and deepen the innovation processes, this is of critical importance.
>
> (Chapter 10, p. 210)

As these examples make clear, applying a sustainable food systems lens provides a holistic entry point to understand more about the enablers and impediments to innovation. Urbal provides the guidelines to map and understand more about the related changes and impacts.

2.2.2 Social inclusion

Not unexpectedly given the focus on social innovation and participatory research, social inclusion was an important, common theme for UFILs. Actively engaging with social dimensions through the Urbal process-enabled several UFILs to clarify their goals, set priorities, and determine next steps. Urbal findings also contribute to the theory of socio-technical innovations by providing a more explicit consideration of social aspects helping to address one of the critiques of transition theory (Geels, 2019).

For example, in the case of Mexico City, the workshop enabled:

> learning for collective action in the context of smallholder market participation (Kruijssen et al., 2009). It helps the group to jointly defining problems, searching for and implementing solutions, and assessing the value of solutions for specific problems, in other words it participates to the social learning and allows to create a collective cognition (Koelen & Das, 2002).
>
> (Chapter 4, p. 60)

In the Brasilia UFIL (Chapter 3), Urbal helped to identify impediments including the identification of challenges faced by the chef network such as inconsistent supply from local producers and the difficulty this poses to planning and administration as chefs work to use local food in menus. The results of this uneven access to local food meant that only high-end restaurants were able to support these specialized local farmers making their inclusion in the broader food system challenging. In addition, high-end consumers seemed to prefer not to eat local, heritage foods. This further challenged chefs as they tried to educate people about sustainability through activist-oriented gastronomy.

In the Berlin UFIL (Chapter 8), they looked to increase their focus on social innovation by:

> explore [ing] how technical innovation in urban food systems can be expanded to include social dimensions in addition to environmental and economic considerations as part of a more holistic approach to sustainability. Given that the Urbal approach was designed to enable stakeholders to consider multiple sustainability dimensions concurrently, ECF helps to test and develop a more comprehensive sustainability assessment for urban food system innovations…as well as trying to understand how socio-cultural dimensions are being included by investigating the motivations and efforts provided by the ECF farm and evaluating additional steps to how these efforts could be further integrated into initiatives as part of sustainability framings.
>
> (Chapter 8, p. 144)

In the Hanoi UFIL (Chapter 7), Urbal enabled a better sense of existing obstacles and enablers which in turn helped to improve the innovations in an evidence-based way. In Ma Cantine Autrement (Chapter 5), the UFIL fostered multi-stakeholder interaction, as "[t]he workshop took place in good conditions, participants reported a good time and were unanimous on the importance of such multi-stakeholder arenas, previously non-existent, around school catering" (p. 144). This included a specific desire to develop a network between school canteens. In the Berlin UFIL (Chapter 8), the Urbal process supported a relationship between Technical University Berlin, a founding organization for ECF, and the Berlin Senate. And as discussed previously, in the Cape Town

UFIL, Urbal was taken up as an approach by the municipal and regional governments. These on-going relationships will help to embed Urbal findings and relationships as well as build capacity. As one Cape Town Respondent explained:

> An overarching philosophy behind the drafting process was a desire to not only arrive at a policy or strategy document, but to use the drafting process to build a community around what we ultimately wanted to implement.
>
> (Chapter 10, p. 199)

However, as the Cape Town UFIL notes, the Urbal approach also presented challenges in terms of social inclusion:

> This approach was not without its challenges. Unresolved dissonance remained. In the contested space that is food, opposing positions remained. Additionally, issues linked to food, but separate were frequently conflated with the food issue (such as land reform and water rights) by a number of attendees, particularly those without tenure or working in the informal sector. Additional care was taken to focus on positive actions and research that already existed, rather than re-doing the same work (R2, 2020).
>
> (Chapter 10, p. 198)

As the Urbal approach confirms, the complex and interconnected nature of food can make it challenging to determine opportunities for change that will include marginalized communities.

2.3 Challenges, opportunities, and future research

The Urbal project provides a tested approach to mapping sustainability outcomes, changes, and impacts from food systems innovation. It also results in timelines and network diagrams as well as a better sense of where the enablers and barriers exist on the path to increasing sustainability. Urbal is also easily tailored and adapted to various innovation initiatives. Combined, this offers a way to benchmark, create a vision for, plan, and even monitor change over time. As the chapter on Cape Town explains:

> The Urbal approach sought to map the impact of the Nourish to Flourish innovation and capture the emergent impact pathways. The Urbal process offered great utility as both an analytical tool in and of itself, and in the way in which outputs and outcomes of the methodology were used by research participants to give the work an afterlife… New work is emerging and the Nourish to Flourish plans are now being operationalised through explicit site level activities. This new work has been made

> easier as a result of the conversations and reflections enabled through the Urbal activities, and the utility of the Urbal approach in describing the innovation and its subsequent processes. The Nourish to Flourish document was seen as important and a small group of food system actors rallied around the strategy.
>
> (Chapter 10, p. 188)

As a multi-stakeholder participatory approach and convening tool, Urbal can help build links between otherwise siloed institutions, sectors, and actors and provide a neutral place from which to assess the progress of an innovation, as well as policies and programmes.

While the Urbal approach has many benefits, it also surfaces some questions about inclusion (Gibson et al., 2017; Gray et al., 2022). While place-based circumstances are foundational to how Urbal is interpreted and applied, the unique circumstances of each UFIL raise questions of cultural relevance. For example, in Vietnamese, the dominant language of Hanoi, there is no word for "sustainable". So, while it was possible to explore sustainability dimensions in the Hanoi UFIL (Chapter 7), the idea of sustainability as defined for this research was absent. The Hanoi chapter therefore takes on a reflexive perspective, questioning both the appropriateness of focusing on a concept as culturally specific as "sustainability", and the challenges raised by implementing a participatory approach in a strong state-driven context. As a result:

> Impact pathway maps designed during participatory workshops involving the main actors of those innovations reveal that economic efficiency, food safety, and trust are considered as the main dimensions of sustainability impacted by the e-commerce of quality food products. Those innovations do not target sustainability at large and explicitly. They rather emerge from an instrumental understanding of e-commerce as a way to improve the relationship between suppliers looking for market opportunities and consumers seeking convenient and reliable channels of provision. Environmental and ethical issues are rarely targeted *per se* by those innovations, although they might emerge as potential positive externalities. Most actors are concerned by issues pertaining to trust: the time and space lags between ordering, shipping and receiving the goods may result in poor appreciation of the products and in loss of quality; e-commerce is barely controlled by public authorities, which may allow for fraud and carelessness on both sides. Trust building is also a key issue in establishing reliable trading platforms, as shown by the Hanoi public-private platform which faced many obstacles and failures.
>
> (Chapter 7, p. 118)

While major concerns with food quality and safety exist, the key question that emerged in Hanoi was whether e-commerce could be deployed to address these

concerns and if those solutions can deliver premium prices to farmers so their livelihoods were appropriately valued. The interviews and workshops revealed the difficulty in addressing food systems sustainability as a holistic and multi-dimensional concept with local actors and exposed gaps in Urbal's participatory development process. In the end, while Urbal was handed over for testing to UFILs with several key guiding foci, including the goal to address sustainability dimensions, the Hanoi UFIL makes it clear that Urbal's foundational concepts are not valid starting points in all cases.

While it is important to offer alternative approaches that future users of Urbal can draw on, each application of Urbal will be unique and so needs to develop its own approach. For example, the Ma Cantine Autrement UFIL findings point to the need to engage with stakeholders in appropriate ways:

> clearly informing the actors (children, parents, canteen staff) about the objectives and expected benefits of each activities implemented was identified as a main condition of success, what consequently underlined the key role of canteen staff—as key contacts for children and parents—in the success of the program. In the purpose of improving communication and information about the program, participants showed a strong interest for building a multi-actors committee gathering all stakeholders concerned by school canteens. The IP [impact pathway] analysis also highlighted the complementarity between different activities of [Ma Cantine Autrement], in particular for the cost of the program that was balanced by combining activities inducing higher cost with others allowing budget savings. Complementarity also stated in activities whose performance were mutually improved, or in negative effects balanced by positive effects within an activity, or between activities.
>
> (Chapter 5, p. 79)

Such a prescriptive approach would not have been useful in the governance focused UFILs such as the Agricultural Districts around Milan, or in Cape Town where creating safe discussion spaces for whatever was a key role for Urbal. Again, the importance of flexibility for the Urbal approach is apparent.

2.4 Concluding thoughts

As with the vast majority of current sustainability research, the looming question is, how can Urbal help accelerate transformation (Anderson et al., 2019; Tornaghi & Dehaene, 2020)? In the same way that a systems approach offers an integrative perspective for sustainability, such an approach can also help us understand dynamics between and across scales. Urbal provides insights into these cross-scalar transitional spaces (Bilali, 2020). As demonstrated in the Ma Cantine Autrement UFIL (Chapter 5), the Urbal approach provides

insights on changes and impacts that uncover the process of food systems transformation directly addressing scaling issues. Urbal's focus on a multi-dimensional understanding of sustainability means that it can be applied at multiple scales so that "the systematic nature of interventions for the sustainability of the food system and thus, the fact that the area of impact are actually wider (sustainability dimensions of related activities are indirectly involved)" (Chapter 5, p. 79). Applying the Urbal approach also adds to what we understand about scaling as described by Moore and Riddell (2015) where: 1) *scaling up* is about impacting laws and policy; 2) *scaling out* occurs through duplication as the innovation spreads, evidence for which includes the replication or spreading of projects and programmes geographically and/or to greater numbers, or the dissemination of principles, knowledge, and experiences with adaptation to new territorial contexts; and 3) *scaling deep* is impacting cultural roots, and entails spreading cultural ideas by using stories and providing other evidence to shift norms and beliefs and can require significant investment in transformative learning and Communities of Practice. These three forms of scaling are not mutually exclusive and can help innovators shape hybrid strategies to think and act towards a wider change. The Urbal process supports the identification of the transformational opportunities that emerge from scaling including the modalities of change initiated by innovation activities as Urbal characterizes the enablers, conditions for success, impediments, and levers that make change and/or impact possible. This knowledge makes it possible to understand the diversity of the innovation impacts and helps to clarify the capacity to amplify these impacts as an opportunity to foster increased transformation.

Identifying these scaling opportunities is at the core of Urbal's focus on impact pathways, making various types of scaling more apparent. The ECF farm project in Berlin (Chapter 8) provides an example of scaling out and demonstrates how urban agriculture can be linked to its urban context and surrounding region, as well as how the ECF Farm's turnkey operations installed in other cities are connected to their communities, regions, and other places, and contribute to the dissemination of change. In the Hanoi UFIL (Chapter 7), scaling out was achieved through online platforms in various locations. In the Mexico City UFIL (Chapter 4), scaling deep occurred through the Urbal approach which raised questions about how to include actors and "raise the scope of food justice action" especially with respect to agency and power dynamics for farmers. Addressing this question is the main goal of Urbal Step 3 that offers a unique opportunity to go beyond the simple and limited assessment of the impact of isolated innovations and to reflect on the interconnections and possibilities for a wider impact on food system sustainability. Specifically, the Urbal approach can help stakeholders address questions such as how can innovations be more widely adopted, and ultimately lead to transformative impact? As such, whatever choices might be made regarding the specifics of an Urbal project, Step 3 can foster a reflexive exercise on the different forms of scaling.

Garnering the support of public authorities is a possible secondary impact of Urbal. As the case of Ma Cantine Autrement demonstrates,

> The exercise of cross-sectional analysis of Urbal results allows [us to] order and prioritise [Ma Cantine Autrement] activities according to their weight and influence on each other. This result can provide interesting knowledge for decision making for improving the sustainability trajectory that the project engenders.
>
> (Chapter 5, p. 79)

Ma Cantine Autrement sought to amplify the scope of the innovation by extending the measures taken by the programme and contributing to a spin-off via a cooperative initiative with neighbouring school canteens. This supported the goal to anchor change at the territorial scale, despite international trade agreements that limit their ability to procure local food.

In summary, Urbal enables innovators to: 1) identify multiple sustainability dimensions simultaneously across scales; 2) monitor short-, medium-, and long term indicators; and 3) develop a collective understanding of the innovation. As previously discussed, while it is challenging to include all the key actors, Urbal can result in a more balanced assessment as inclusive participation can raise both positive and negative considerations.

The results of Urbal thus invite us to think about the mechanisms, activities, and instruments, existing or to be created that can be used to ensure the short- and medium- term changes and long- impacts of innovation. The potential to use Urbal to monitor sustainability is also very promising for researchers, funders, and policymakers. As UFILs identify similar challenges, there is also the opportunity to build global Communities of Practice and create solidarity around sustainability action. Urbal can help expose spaces where change is needed and how this can happen, clarifying how innovation can contribute to the transition to more sustainable food systems.

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