

FOODSHIFT

2030

Innovation Brief 1

Citizen Driven Innovation

Due date of deliverable 30/11/2020
Actual submission date 16/03/2021
Start date of project 01/01/2020
Duration 48 Months



This project has received funding from the European Union's Horizon 2020 research and innovation programme under Grant Agreement No 862716.

Project Title	FoodSHIFT2030 - Food System Hubs Innovating towards Fast Transition by 2030
Contract Number	862716
Work Package	WP2 Accelerating the solutions
Deliverable	D2.1 Briefs on innovation potentials of food systems (1)
Task(s)	T1.2 Explore existing food system innovations D1.3 Catalogue of existing food system innovations T2.1 Co-develop implementation targets for accelerating food system innovations
Document Name	FoodSHIFT2030 Innovation Brief No 1. Citizen-driven Innovation
Due Date	M11: 30 November 2020
Submission Date	M15: 16 March 2021
Dissemination Level	<input checked="" type="checkbox"/> P – Public <input type="checkbox"/> CO – Confidential
Deliverable Lead	SUSMETRO
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Abstract (for public dissemination only)	The first FoodSHIFT 2030 Innovation Brief presents a set of descriptors for exploring (1) which types of citizen-driven innovation can be considered to be making a difference, (2) what is the actual level of citizen involvement, (3) approaches towards financial viability, and (4) which perspectives for upscaling and optimisation are in sight.
Statement of originality	This deliverable contains original unpublished work except where clearly indicated otherwise. Acknowledgement of previously published material and of the work of others has been made through appropriate citation, quotation or both.

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Version History

Date	Version history	Description of changes	Author
19.03.21	V2	Minor adjustment to co-authors	Luke Schafer

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Citizen-driven Innovation

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Geared towards implementing the Farm to Fork Strategy, the EU Horizon 2020 project *Food System Hubs Innovating towards Fast Transition by 2030* (FoodSHIFT2030) aims at mobilizing citizen-driven innovation at the level of city regions for a transition towards a low-carbon, circular and plant-based food system.

The Farm to Fork Strategy – one of the cornerstones of the EU’s highly ambitious ‘Green Deal’ put in place to make Europe a climate-neutral continent by 2050 – makes explicit references to the role of the COVID-19 pandemic as a magnifying glass for exposing the risks and shortcomings of the current global food system. Issues such as the enormous ecological and carbon footprints related to urban food consumption, the widespread effects of intensive livestock farming on water, air quality and especially fine particles (PM2.5) – contributing to viral infections – and the increase of heart disease and obesity, food waste, loss of biodiversity as well as social injustice manifested in unfair pricing, can hardly be considered as ‘side-effects’ as they are severely impacting our quality of life. Over the last years, however, food experts, policy makers, media and consumers have increasingly turned their attention to a wide range of food system innovations that operate largely outside the existing global food system dominated by industry and retail, thriving upon high-carbon, low cost-price, meat-based and sugar-rich products following the logics and logistics of the world market. In fact, non-mainstream innovations can potentially offer new holistic perspectives by combining market and product innovation with social innovation, adhering to the *sustainable design, circular economy and innovation value chain* approach associated with what is called the Circular Economy 2.0 (EU 2020⁶). While the existing system is largely centralized, global, linear and top-down, more sustainable systems are typically decentral, regional, circular and bottom-up. As it appears, both the global, as well as the rich and diverse world of alternative food systems, are driven by citizens who act as crucial players to trigger change: our choices, our values, and our knowledge will ultimately decide which type of system is good for us and the world we want to live in.

Our main attention goes to urban food systems as part of the wider city regions where citizens are increasingly taking a central role in the transition towards low-carbon, plant-based and circular food systems. Following a short review of emerging food policies, this

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⁶ EU2020. A new Circular Economy Action Plan For a cleaner and more competitive Europe. COM(2020) 98 final

first Innovation Brief presents a set of descriptors for exploring (1) which types of citizen-driven innovation can be considered to be making a difference, (2) what is the actual level of citizen involvement, (3) approaches towards financial viability, and (4) which perspectives for upscaling and optimisation are in sight. Drawing upon three concrete examples from the FoodSHIFT2030 Accelerator Labs⁷ (FAL) in Athens, Wroclaw and Oostende, we will discuss the findings in the context of sustainability targets and design principles as key references for supporting these innovation cases. We finally propose some concrete measures for accelerating the solutions through upscaling and wider policy measures at the level of city regions.

Since operations under FoodSHIFT2030 have only started some months ago and have been largely affected by the COVID-19 pandemic events of 2020, we can only offer initial observations while making occasional references to findings and insights generated at the level of other, closely related research projects and examples at the international and national level. While not meant to be in-depth itself, the series of Innovation Briefs can hopefully help sharpen the perspectives and direction of research in the field of food system transitions inside and outside of FoodSHIFT2030.

Brief review on the emergence of food policies

Despite a series of major policy reforms starting in 1992 (EU Parliament 2020⁸), the EU's Common Agricultural Policy (CAP) stands out as the main economic driver that is severely impacting climate, human health, water quality and biodiversity, to name just a few (EEA 2019⁹). This shows that current sectoral policies are still far from being effective and that integrated approaches are needed to trigger transitions towards a sustainable food system. Already in 1996, the World Food Summit in Rome had called for Food Sovereignty as the right of peoples to define their own food and agriculture, to protect and regulate domestic agricultural production and trade in order to achieve sustainable development objectives (Via Campesina 1996¹⁰). Emphasising the need for regional solutions and citizen-centred development (Via Campesina 1996¹¹) of policy, Food Sovereignty, must be considered as an emerging issue on the policy agenda of many European cities (de Cunto et al. 2017¹²). In the year 2000, Pothukuchi and Kaufman¹³ confronted their peers with the question: "Why have planners paid so little attention to the food system?" – an article that paved the way for the first food councils at the level of municipalities. The same question should have been posed

⁷ Labs – FoodSHIFT2030

⁸ Fact Sheets on the European Union, 2020. [The common agricultural policy – instruments and reforms | Fact Sheets on the European Union | European Parliament \(europa.eu\)](#)

⁹ EEA 2019. The European environment – state and outlook 2020: knowledge for transition to a sustainable Europe, Chapter 3.2. [\(The European environment – state and outlook 2020 – European Environment Agency \(europa.eu\)\)](#)

¹⁰ Via Campesina. 1996. 'Definition of Food Sovereignty', <http://www.corrientesaldia.info/99842/Que-es-la-Soberania-Alimentaria>

¹¹ See p16 & 27 for more info: <https://viacampesina.org/en/wp-content/uploads/sites/2/2018/02/Food-Sovereignty-A-guide-Low-Res-Vresion.pdf>

¹² De Cunto, A., Tegoni, C., Sonnino, R., Michel, C. & Lajili-Djalai, F. 2017. Food in the Cities. A Framework Contract for the European Commission. [\(food_in_cities.pdf \(europa.eu\)\)](#)

¹³ Pothukuchi, K. and Kaufman, J.L. The Food System – A Stranger to the Planning Field (1_4JAPA.pdf [\(wayne.edu\)](#))

much earlier to policy makers at the European and national levels. Addressing the special case of urban food systems, Piorr et al. (2011)¹⁴ acknowledged that a multi-level governance agenda outside of CAP needs to provide space for new forms of (social) enterprise and multi-stakeholder cooperation. In 2015, the Milano Urban Food Policy Pact¹⁵, meanwhile signed by more than 100 mayors around the world, has put *food* more firmly on the policy agenda. Its second action calls for:

... enhancing stakeholder participation at the city level through political dialogue, and if appropriate, appointment of a food policy advisor and/or development of a multi-stakeholder platform or food council, as well as education and awareness raising.

In 2017, the EU Conference on Harnessing Research and Innovation¹⁶ identified *empowerment of communities* as one of the Nutrition Security priorities. According to the EU's Farm2Fork Strategy¹⁷, all citizens and operators across value chains, in the EU and elsewhere, should benefit from a *just transition*, especially in the aftermath of the COVID-19 pandemic and the economic downturn.

Citizen Involvement for Food System Innovation

As seen in the development of policy in recent years, citizen involvement is gradually finding its place on governance agendas. Although this could be considered a slow-moving process at governance level, there are many examples of thriving citizen-driven innovations to be found in urban foodscapes. These initiatives already indicate the powerful innovation role that citizens can play in their local food systems, even when such initiatives are not yet addressed at policy level. In the following, we would like to differentiate four main types of citizen involvement that may be encountered in citizen-driven innovations, namely prosumption¹⁸, initiative-taking, co- and self-governance, as well as citizen science and training:

- Citizen prosumption
The terms prosumption and prosumer have proven to be of relevance as it comes to the current energy transition: consumers generate (part of) their own energy, and become, as a consequence, also producers of energy that they also can sell to a network. Both prosumption and prosumer could gain importance in food too, because the terms imply changing relationships and responsibilities. Notable innovations include:
 - Gardening and household farming (e.g. 'windowsill', balcony, Guerrilla Gardening)

¹⁴ Piorr, A., J. Ravetz, and I. Tosics (eds.). 2011. Peri-urbanisation in Europe: Towards European policies to sustain urban-rural futures. Copenhagen: University of Copenhagen, Forest and Landscape.

¹⁵ [Milan Urban Food Policy Pact](#)

¹⁶ [EEA food2030_report_conference_2017.pdf](#)

¹⁷ [f2f_action-plan_2020_strategy-info_en.pdf \(europa.eu\)](#)

¹⁸ Veen, E.J., Dagevos, H. and Jansam, J.E. 2021. Pragmatic Prosumption: Searching for Food Prosumers in the Netherlands *Sociologia Ruralis*, Vol 61, Number 1, January 2021. [Pragmatic Prosumption: Searching for Food Prosumers in the Netherlands \(wiley.com\)](#)

- Personalised nutrition (e.g. for therapeutic and dietary purposes)
- Wild foraging (e.g. food forests)

- Citizen-led initiatives
 Typically, citizen initiatives are action-oriented involving networking between citizens that can lead to formal or informal forms of cooperation in support of a goal, e.g. urban food production, agricultural/landscape management or setting up food councils – often closely associated with social agenda’s such as inclusion. Notable initiatives include:
 - Citizens setting up a local food chain (e.g. Community-Supported Agriculture)
 - Citizens co-creating a food landscape (e.g. an agricultural park)
 - Investment for supporting regional producers (e.g. crowd funding)

- Citizen co-governance & democracy
 Often closely linked to the above, self-governance such as Alternative Food Networks (AFNs) (Goodman & Goodman, 2009ⁱ) frequently make use of informal governance structures. Forms of co-governance can also include the organisation of panels/forums and have direct influence (lobbying, programming) on regional policies towards sustainable goals. Notable initiatives include:
 - Citizens as co-manager of food systems (e.g. avoiding waste)
 - Institutional renewal (e.g. food councils, procurement, school food)
 - Citizens as democratic agents (e.g. voting, protesting, programming, planning)

- Citizen science & training
 Citizen-science, as part of a bottom-up transition of the food system, entails (tacit) knowledge exchange (e.g. recipes, traditions) technologies, materials and methods via tools or training for a more efficient and/or sustainable food system; but also as monitoring agents for accessing food system changes to contribute to impact assessment and policy development. Companies and government bodies might seek citizen input as part of an open innovation process. Examples are:
 - Household devices/decision support apps, e.g. for waste management & circularity)
 - Citizens as data sources (e.g. health, behaviour)
 - Citizen input to open-innovation (e.g. new products)

These four types of citizen-driven food system innovation are marked by rather soft boundaries allowing for fluid and multiple connections between them. Especially the first three types are closely interrelated because their sequence is meant to signal an increasing role as co-designers of a more sustainable future food system. Here, prosumption takes a more modest role, while wider land-based initiatives and cooperation with farmers can be considered to make a wider impact on the system, up to engaging in co-governance and a further institutionalisation of alternative food system approaches at the level of policy and markets. The fourth type, citizen-science and training, offers more horizontal mechanisms

making use of ICT, communication and monitoring tools, thereby blending social and technological innovation in support of creating higher impacts of the first three types (The World Bank, 2015¹⁹).

Illustrating that the food system consists of more than a food chain connecting the fork with the farm, Figure 1 presents a hierarchical model of policy & market as both a driver and response of the food system, the food and agro business as the leading economic sector and the role of the people – as consumers or – as we argue in this document – as drivers of change through different types of innovation. Figure 1 also provides references to the currently dominating food system (indicated in grey) with rather strong top-down processes directed towards citizens as consumers and relatively weak possibilities of influencing this system upstream. As indicated by the new colour-coded functions, we also anticipate more integrated and sustainable operations on the side of business and policy, allowing citizens to more effectively engage in co-designing the food system future.

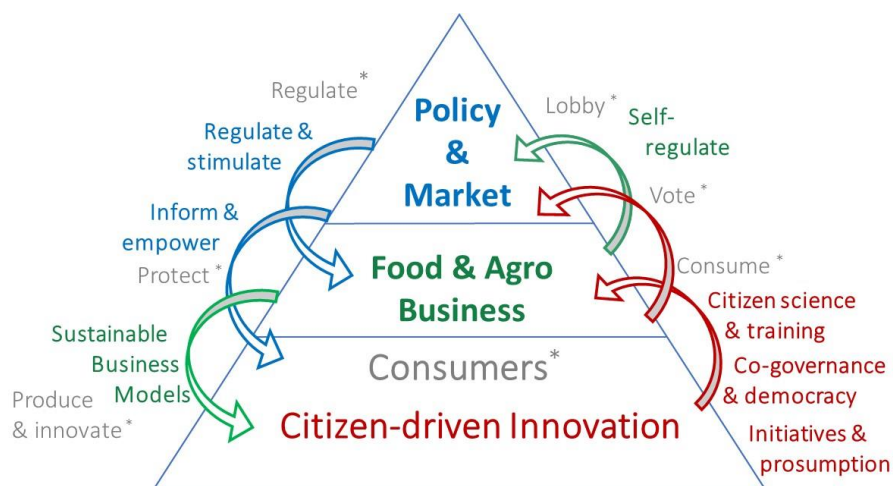


Figure 1: Citizen-driven innovation model with citizens as drivers of the food system in colour; current/mainstream food system functions in grey and marked with *.

Describing Citizen Driven Innovation

As we have seen, Citizen Driven Innovations in urban food systems take varied forms, with diverse goals, target groups and organizational set-ups. Here we propose a set of descriptors that can be used as a simple framework when profiling and comparing CDI cases. The four descriptors are explained below and include *Type of Citizen Driven Innovation*, *Level of Citizen Involvement*, *Financial Viability*, and *Upscaling & Optimisation*:

1. Type of Citizen Driven Innovation

The typology of these innovations is identified, often encompassing elements from more than one of the types described earlier in this brief (see page 4). A short explanation of why the innovation is linked to each type is also provided.

¹⁹ The World Bank 2015. Citizen-driven Innovation. A guidebook for city mayors and public administrators. 132 p.

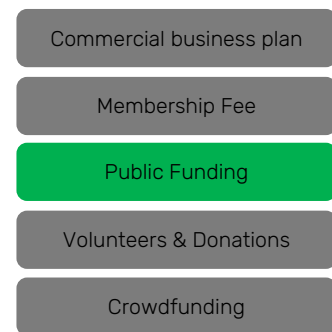
2. Level of Citizen Involvement

CDIs often have varying levels of citizen involvement, ranging from *informing*, considered the basic level, to *empowerment* which is the most advanced level, as shown in the diagram below. These levels are based on the Ladder of Citizen Participation²⁰. The colour coding indicates at what level the CDI is currently operating (bright green), aims to achieve in the future (light green) and is not achieving (grey), as shown in the example diagram below.



3. Financial viability

For each CDI, the mechanism used to support the initiative financially is indicated in green, as shown in the diagram to the right. Some CDIs are supported by more than one mechanism, e.g. commercial, public funding and private funding. Private funding can come through different channels (membership fees, donations, crowdfunding).



4. Upscaling & Optimisation

The intention and ambition for upscaling and/or replication is indicated for each CDI, whereby upscaling refers to expansion of activities or volumes, whilst replication refers to the roll-out of the CDI in other locations. Recommendations and ideas for optimisation of the CDI are also briefly described.

In addition to these four descriptors, implementation targets should be acknowledged (see Wascher & Arciniegas 2020²¹), such as the four innovation dimensions (product, process, social or governance) as well as sustainable design and circular economy principles. Though very relevant, these implementation targets are not included in the selection of descriptors as their complexity reaches beyond the scope of this document. The same accounts for the role of the innovation value chain – hence the question which value creation along the food chain has taken a central place when deciding on the type and purpose of an innovation.

Examples of CDI from the FoodSHIFT Accelerator Labs

In the following we present three concrete examples for citizen-driven innovation associated at the level of the FoodSHIFT2030 City Regions in Athens, Wroclaw and Oostende.

²⁰ <https://organizingengagement.org/models/ladder-of-citizen-participation/>

²¹ Wascher, D. & Arciniegas, G. 2020. Innovation Management, Deliverable 8.4 for the EU project FoodSHIFT2030

'Kafsimo' (InCommOn¹, Thessaloniki)

Location: Kilkis & Thessaloniki, Greece

Key Concept: The collection of used coffee grounds from cafes for conversion into biofuel serves as an example of teaching local school students the principles of circular economy and green innovative entrepreneurship.

The case not only shows how to generate economic gains from recycling waste, but also aims to develop a replicable model whereby local (vulnerable) people can be trained and develop employable skills for the green economy.



Innovation Case Profile

1) Type of Citizen Driven Innovation

- ✓ **Citizen Science & Training:** Educational activities of InCommOn for engagement of local school students for first-hand information/data on organic waste management. In addition, demonstration materials at events facilitate education on circular economy principles.
- ✓ **Citizen Initiative:** Replicable model to be adopted by citizens in their own area, recognisable through initiative branding to increase consumer awareness.

2) Level of Citizen Involvement



Informing: Kafsimo can be used as an example/demonstration to teach children the principles of circular economy and the importance of waste reduction.

Collaborating: Through the collection of coffee waste from local businesses, local citizens and business-owners directly become part of the activities and life-cycle of coffee. Kafsimo also collaborates with Staramaki in a multi-circular model of exchanging coffee waste with a symbolic number of wheat straws.

Empowering: As the initiative is adopted by citizens, the model can be replicated elsewhere, empowering local citizens to build this chain in their area. Education activities also support the possibilities for citizen empowerment.

4) Upscaling & Optimisation

- ✓ Upscaling
- ✓ Replication (other locations / waste streams)

The educational activities relating to circular economy and waste can be easily upscaled through integration at other schools in other areas by developing new partnerships. As for the valorisation of coffee grounds into biofuel, this could be replicated in other regions through adoption of the model by local citizens in those areas. In addition, the model could be adapted to other organic waste streams and also presented as a demonstration in educational activities, presenting diverse valorisation opportunities. Integration and synergising with national educational guidelines could also support the possibilities for replication of learning activities.

3) Financial Viability



The initiative is currently maintained by several sources of funding and aims to be financially sustainable through the sale of the produced biofuel.

Photos credits:
Olga Saliampoukou
Photography
1) <https://incommon.gr/>

Toolbox for Community Gardens

Location: Wrocław, Poland

Key Concept: A working group providing a 'tool-box' of support and resources for local citizens to set-up community gardens, including: Mapping of locally available plots, guidance on regulations and usage, garden design based on sustainable principles, workshops and a starter-set containing essential gardening equipment. In addition, an online platform is also being set-up to facilitate local clustering of interested citizens and knowledge exchange.



4) Upscaling & Optimisation

- ✓ Upscaling ✓ Replication (other locations)

The initiative aims to support the set-up of as many gardens as possible. However, municipal plots are limited and transport links can be a limiting factor for local citizens. Partnerships could be used as a tool to find access to more plots, or to stimulate citizens to locate (private) plots in their neighbourhood that could be converted. The toolbox could also be replicated in other regions, dependent on availability of funds for the set-up of a working group, or volunteers could be considered.

Photos courtesy of Ołbiński Ogród Otwarty (Ołbin's Open Garden) Wrocław via Facebook:
<https://www.facebook.com/OlbinskiOgrodOtwarty>

Innovation Case Profile

1) Type of Citizen Driven Innovation

- ✓ Citizen Initiative: The gardens are set-up, managed and maintained by local citizens who volunteer to do so, with support of the toolbox and working group to get started.
- ✓ Citizen Prosumption: The gardens result in local production of fruit and vegetables for direct consumption using ecological and sustainable production practices.

2) Level of Citizen Involvement



Consulting: To establish the needs and wants of local citizens regarding green spaces, local citizens were surveyed for input. This input then formed the basis of follow-up actions.

Collaborating: Through the set-up of a working group and community garden tool-box, citizens are invited to get in touch for support in setting-up a garden. This collaboration between the working group and citizens to set-up and facilitate the running of a garden creates a facilitating environment for local citizens. A Facebook group is also being used to engage with almost 400 interested citizens.

Empowering: Empowerment is the end goal of the working group, whereby citizens should have direct access to comprehensive information, tools and resources to be able to put plans into motion themselves to successfully set up community gardens.

3. Financial Viability



City-border farming by Buitengoed

Location: Oostende, Belgium

Key Concept: Peoples cooperative that has initiated the planting of a city-border forest, set-up of an organic vegetable garden (following the principles of community supported agriculture) and meat production. Locals pay a membership fee for the vegetable garden and can take part in farming activities, harvesting the fresh produce.



Innovation Case Profile

1) Type of Citizen Driven Innovation

- ✓ Citizen Initiative: The farm invites members, who are local citizens, to participate in the production and harvesting of food, and in the planning and planting of forests in the local area.
- ✓ Citizen Self/co-governance: The farm operates based on the principles of Community Supported Agriculture, whereby organic and sustainable production principles are promoted and the building of an inclusive community surrounding the farm activities is a priority.
- ✓ Citizen Prosumption: Members are welcome to assist in the production and harvesting of the produce, from which weekly vegetable boxes are prepared.

2) Level of Citizen Involvement



Collaborating: Engaging with local citizens is essential as this not only forms the market for the end products, but also encourages direct involvement in farming activities, which in turn also educates and connects local citizens. By collaborating with citizens, the social impact is increased and provides opportunities for expansion through increased labour availability and demand for produce.

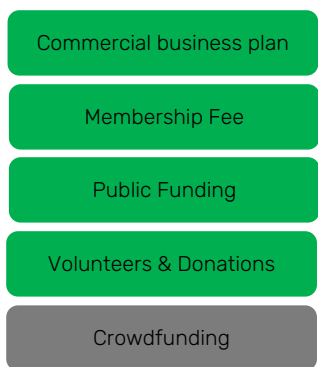
4) Upscaling & Optimization

- ✓ Upscaling
- ✓ Replication (Other locations)

The number of members is already growing, alongside the infrastructure and efficiency. More partnerships are needed, and could result in opportunities for vulnerable people to gain work experience at the farm, as well as opportunities to strengthen the value chain by connecting with local restaurants, bakeries, food processors, etc... Diversification of activities could also be achieved through partnership, by sharing of expertise in sustainable dairy production or grain cultivation.

Images sourced from Buitengoed website.
For more information please visit:
<http://www.buitengoed.be/>

3) Financial Viability



Buitengoed offers annual membership options which are supported by an underlying business model that ensures the farm is economically sustainable. Volunteer and public contributions are also welcomed.

Discussion: Sustainability Targets and Design Principles

Currently – in the mainstream food system – value creation is strongly targeted at competitiveness and resource efficiency in terms of process, but also at lifestyle and health in terms of product innovation. The value of sustainability – manifested in an internalisation of costs and a structural application of circular economy principles – is often *undervalued*, resulting in distorted price regimes (Wascher & Arciniegas, 2020²²).

The examples show that citizen-driven innovation can be considered as a form of social innovation, which forms together with product, process and governance innovation the four cornerstones of food *system* innovation (Wascher et al., 2015²³). In order to be fundamental, effective and long-lasting – hence in order to perform true system transition – innovation should address more than just one of the above domains, namely by pursuing integrated and combined efforts at several levels and in collaboration with stakeholders from other innovation domains. This means that also citizen-driven innovation is likely to be more effective when linking up with process, product and governance innovation in order to increase its impact and to ensure a high level of embeddedness across the whole food system.

In contrast to mainstream approaches towards innovation thriving upon linear and top-down economic models, the new generation of innovations favour a sustainable design thinking approach. According to Razzouk²⁴ (2012), ‘sustainable design’ is mainly *attributed to an analytic and creative process that engages a person in opportunities to experiment, create and prototype models, gather feedback, and redesign*. A more in-depth analysis of the CDI cases should hence take into account trade-offs between issues such as climate change (e.g. introduction of heat-resistant plants), circular economy (see next section), lifestyle (e.g. urban agriculture as a more mainstream activity), health (e.g. pandemic or environmental crisis situations affecting food security), but also changes in EU regulations regarding food safety standards.

Today’s dominant industry-driven and world-market-oriented food system is promoting innovation mainly as an incremental process along the lines of global competition (lowest cost-price), resource efficiency (especially energy) and technological performance (e.g. robotisation). In their analysis in 2018²⁵, Smith and Stirling acknowledge, that “too often, the very real politics of innovation is masked by technocratic and exclusive approaches imposing narrow criteria of efficiency, profit and convenience.” It is interesting to note that innovation in support of true system transition is typically following niche, out-of-the-box and experimental approaches that appear to flourish especially where policy is absent. This

²² Wascher, D. & Arciniegas, G. 2020. Innovation Management, Deliverable 8.4 for the EU project FoodSHIFT2030

²³ Wascher, D., Kneafsey, M., Pintar, M. and Piorr, A. 2015. Food Planning and Innovation for Sustainable Metropolitan Regions – Synthesis Report. Wageningen UR publication et al. 2015.

²⁴ Razzouk, R. (2012). What Is Design Thinking and Why Is It Important? In: Review of Educational Research, September 2012, Vol. 82, No. 3, pp. 330–348

²⁵ Smith, Adrian, and Andrew Stirling (2018). “Innovation, Sustainability and Democracy: An Analysis of Grassroots Contributions,” Journal of Self-Governance and Management Economics 6(1): 64–97.

https://www.researchgate.net/publication/327160216_Innovation_sustainability_and_democracy_An_analysis_of_grassroots_contributions

might be echoed in the definition by Freeman (2011)²⁶: “*Innovation is the capacity of people to successfully exploit a new idea or method and realize some material and social effect.*” This is why citizen-driven food systems are considered as models for a democracy of space, people and knowledge, ensuring transparency and control over food security, safety and quality. Examples of grassroots innovation (Piorr 2011, Wascher 2015, Smith and Stirling 2018) point at opportunities to support citizens and activities in ways that can contribute to practice democracy and enable empowering sociotechnical configurations that help nurture general levels of social diversity.

The following section will briefly examine opportunities for accelerating the impact and up-scaling perspectives of the presented CDI cases.

Accelerating the solutions

The examples from Athens, Wroclaw and Oostende represent only a very small selection of the trends and changes that are happening in the food systems at the level of the European city regions. Looking at the aspects of citizen-driven innovation which propel these examples, a number of opportunities arise to accelerate their effectiveness and impact:

- Athens: as to be expected from a citizen-driven approach, these examples are mainly associated with the social and governance domain. As educational objectives are central to the innovation focus of the Athens FAL, governance/policy developments are addressing mid- and long-term goal setting. In the mid-term, closer cooperation between single schools with innovation leaders from other organisations (e.g. InCommON) will need to be further established with an emphasis on co-designing educational materials and efforts to be tested at schools. In the long-term, these efforts can lead to programming new curriculums (governance) for a wide range of schools at the level of the municipality and even the country. Part of this long-term investment could be the development of close partnerships with sustainable enterprises, the involvement of citizens in practicing circular economy activities (e.g. collecting coffee grounds) and even financial reward systems (e.g., business plans) to share the benefits for doing so.
- Wroclaw: this approach has a stronger short-term and practical dimension as the network of community gardening initiatives in Wroclaw has already been established and is in the process of expansion. The special challenge is to identify new plots and to do so in close cooperation with the municipality. Urban planning and land use zoning schemes need to be adapted – a process that can entail many bureaucratic procedures. Urban food production might be in competition with the need for urban recreation areas and space for nature. At the same time, urban farming can be dynamic and operate at plots which are earmarked for other functions in the future. The strength of the approach is its direct support of local citizens in practicing community gardening and thereby creating a community which is likely to play a key role in the public debate on sustainable food in and around Wroclaw.

²⁶ Freeman, C. (1991) Innovation, Changes of Techno-Economic Paradigm and Biological Analogies in Economics, In: *Revue économique*, Vol. 42, No. 2, Économie et histoire: Nouvelles approches (Mar., 1991), pp. 211–231

- Oostende: The development of specifically dedicated agricultural parks at the periphery of cities is a phenomenon which is gaining increasing importance in a number of European cities. Other examples are the IBA park plans at Schloss Kannawurf²⁷ in Thuringia and Heidelberg in Baden-Württemberg²⁸, the Sabadell Agricultural Park near Barcelona²⁹, the UNINA park near Naples³⁰ or the SALUS Space Gardens near Bologna³¹. The main principles include the combination of multi-functional objectives (living, recreation, farming), a high level of inclusion, e.g. community building for many societal players, i.e. refugees and new forms of regional farming. Because traditional agriculture has largely been mono-functional with an incremental approach towards innovation, municipalities are increasingly discovering the potentials of redefining rural areas around cities as social-ecological refuges or labs for food system transition and experimentation.

The above mentioned opportunities for accelerating citizen involvement in the three examples are only first-hand suggestions developed by the authors of this Innovation Brief. In order to be effective and sufficiently targeted to the regional conditions and socio-economic context of these innovation cases, the innovation leaders and regional FAL teams need to critically review these suggestions, come up with further or alternative measures and mobilize the regional network as the key community of practice to give direction and support to such an acceleration. With regard to the four descriptors for citizen involvement, the type of involvement is very likely to stay the same, simply because innovation leaders have put their inspiration and resources into the existing choice. While other types might still be considered as possible alternatives or of complementary value, changing types will most likely require different initiators and new networks. The desired acceleration – necessary to effectively conquer a stable position in the food system – is probably more closely linked to the level of citizen involvement (e.g. empowerment), the financial viability and the up-scaling/out-scaling or optimisation. Because of the more integrated and holistic nature of these innovations, they will need to invest into their key assets – namely the interface with the citizen in order to let them pro-actively take the role of committed agents of the new circular, low-carbon and plant-based food economy. This means that this acceleration needs to strongly focus on extending its support network. In this context ‘citizen empowerment will be of key value, financial viability needs to ensure that fair prices and adequate return values are being offered – especially during transition periods – and that up- and out-scaling is addressing the increasing role of a citizens as the main drivers.

The role of the FoodSHIFT2030 Acceleration Labs (FALs) will be to cooperate closely with the leaders and protagonists of these and many other innovation cases to help increase

²⁷ [Kannawurf, 1500 Hectares of Field | IBA Thüringen \(iba-thueringen.de\); IBA Campus 2017 Kannawurf kurz.pdf \(iba-thueringen.de\)](#)

²⁸ [IBA Heidelberg - Landwirtschaftspark; iba-kandidat landwirtschaftspark gutachten wascher stokmann bohne.pdf \(heidelberg.de\)](#)

²⁹ [The parks \(sabadell.net\)](#)

³⁰ [Project pilots - Get involved \(foode.eu\)](#)

³¹ [Bologna - SALUS Space Garden — UrbanFarm \(unibo.it\)](#)

their impact at the level of city regions and beyond. In the above sections, a number of possibilities for doing so have been mentioned.

One way of doing so is introducing tech tools such as the Smart Citizen Kit³² or touch-enabled MapTable technology for interactive co-creation around maps³³ – in line with the Citizen Science philosophy – as participatory ways for engaging with citizens when shaping the future food system. For example, the FoodSHIFT Acceleration Lab Food Tech 3.0 (Barcelona) has spent a significant amount of time familiarising their community members with a new concept of food technology. In this case, the attempt culminated in doing a treasure hunt for the Smart Citizen sensors in a local urban garden, ConnectHort, using data obtained from the Smart Citizen Kit, which not only proved to encourage tech and data literacy in their steering committee but also served as a tool to help community members identify with food tech and begin to relate tech and food together in a way beyond just thinking about Monsanto or petri dish meat. This example underlines the close connection between living labs and the role of citizen-driven innovation as put forward by the World Bank: *“Living Labs are “user-driven innovation environments where users and producers co-create innovation in a trusted, open ecosystem that enables business and societal innovation”*³⁴. According to this, the immediate benefits of the Living Lab approach derive from this new relationship created between people and technology: by allowing citizens to design and create their own solutions, the resulting services find *faster* and improved acceptance, with end users gaining a greater sense of empowerment and ownership.

In this respect, the FALs will stimulate and actively support the innovations to further advance, to seek cooperation with relevant partners in the region, to multiply the efforts with the support of citizens and to upscale towards other regions and countries.

ⁱ Goodman, D. and Goodman, M.K. 2009. Alternative Food Networks. In: Encyclopedia of Human Geography, Chapter: Alternative Food Networks, Publisher: Elsevier, Editors: Rob Kitchin, Nigel Thrift https://www.researchgate.net/publication/258498106_Alternative_Food_Networks

³² [Smart Citizen](#)

³³ [Multi-actor Transition Management – SUSMETRO](#)

³⁴ The European Network of Living Labs. 2015. In: Eskelinen, Jarmo, García Robles, Ana, Lindy, Ilari, Marsh, Jesse, Muente-Kunigami, Arturo, Editors, 2015. Citizen-Driven Innovation – A Guidebook for City Mayors and Public Administrators. ©World Bank and ENoLL, 132 pages