

Cities for Food Systems Innovation and Green Jobs

Steps towards food systems approaches for 2030

FOOD 2030 WORKSHOP OUTCOMES REPORT



Those participating in food systems are also the largest group of natural resource managers in the world — and food systems are inextricably connected to nutrition, climate and environment, the circular economy and empowerment, as well as with the broadest range of sectors, industries and jobs.

This Workshop Outcomes Report, based on the knowledge shared at a [FOOD 2030 workshop](#) held at an official partner event of EU Green Week (31 May 2017) presents some examples and recommendations intended to support uptake of a ‘systemic’ approach to food, especially with regard to future research and innovation opportunities. It focuses on the wider [FOOD 2030](#) aim of engaging and mobilising cities to foster improved cooperation and openness amongst multiple food system actors.



#Food2030EU

Research and
Innovation

Overview

- Innovative food strategies in cities tend to use citizen involvement and social innovation as key tools.
- Public procurement approaches are possible with commitment and engagement.
- Food systems approaches including social goals can create green jobs.
- Food sharing can be facilitated by digital innovation.
- Evidence-based tools provide opportunities to redesign food systems inclusively.
- Go beyond city strategies: set innovative operational goals.

1. Introduction

1.1 Activities, aims and objectives of the workshop

This outcomes brief is based on a workshop, Cities for Food Systems Innovation and Green Jobs, (31st May 2017, EU Green Week official side event), hosted by the FOOD 2030 team of the Bioeconomy Directorate in the European Commission DG Research and Innovation. The event provided an opportunity to explore the role of cities in future-proofing the food system. With a focus on regions, cities, local authorities and communities as actors in the process, participants discussed how to foster food-systems innovation and green, food-related jobs at the local level. Speakers presented examples of integrated approaches for sustainable and healthy food production, consumption and use in urban areas, the potential for green job creation, and future research, innovation and investment opportunities. Discussion on the many facets of food systems was shared by participants in two discussion-group sessions; a non-comprehensive selection of comments have been captured here (see Box 1. or the [event page](#) for the full list of these sessions).



Box 1: List of Presentations and Speakers

'FOOD 2030 - EU Research and Innovation for Food and Nutrition Security' *John Bell, European Commission, DG Research and Innovation, Director Bioeconomy*

'Green jobs in food system innovation in cities' *Betina Bergmann Madsen, Copenhagen Municipality*

'Food planning and innovation for sustainable metropolitan regions' (FOODMETRES project) *Dirk Wascher, Alterra Wageningen UR*

'Redirecting surplus food to those in need (SavingFood project)' *Eirini Kalemaki, ViLabs*

'Food in Cities - Innovation for a sustainable and healthy production, delivery and consumption of food in cities (EC DG RTD study)' *Anja de Cunto, EUROCITIES*

'What drives urban food policy: Lessons learned from five case studies (IPES Food report)' *Corinna Hawkes, Centre for Food Policy, City University of London & Jess Halliday, Consultant, International Panel of Experts on Sustainable Food Systems*

'Assessing the practice and sustainability potential of city-based food sharing economies (Sharecity project)' *Anna Davies, Trinity College Dublin*

'Venice (city experience)' *Federico De Rossi, City of Venice*

'Ghent en Garde (city experience)' *Katrien Verbeke, City of Ghent*

1.2 Context of the workshop

Food systems are not just about the provision of sufficient quantities of food, but also about sufficient quality of food; ensuring it is healthy and sustainable for all. At the largest scale there a ‘perfect storm’ has been brewing: approximately **795 million people, one in nine of the global population, suffer from malnutrition**, while nearly **two billion people worldwide are overweight or obese**, and **1.3 billion tonnes of food are lost or wasted each year** (one third of the total food produced for human consumption). Since 2015, there seems to have been a significant step-up in commitment to achieving sustainable food systems involving multiple actors; this has been consolidated by several high-level agreements, including Juncker’s priorities for the European Union, the SDGS, COP 21, the FAO’s World Food Day 2016, and the IPCC’s priorities (John Bell; [FOOD 2030 High-level conference background document](#)).

Long distances from primary supplier to consumer mean that many areas are currently dependent on food imports from far away (‘long value chains’), meaning greater amounts of carbon are being emitted, and nutrient value is lost in transporting food. Close to [25% of all EU agricultural trade is carried out outside of the EU-28](#), with countries which each also have their own food and nutrition security issues to address; the food systems challenge is surely global.

The food system is a dynamic, living entity. Harvests can vary enormously as a result of weather variation (for example, lower-than-usual harvests as a result of unusual weather conditions) and the resources on which harvests depend, such as soil and pollinator services can become exhausted. Good-quality soil, water, land and biodiversity are all critical factors in a future-proof food system – that is, one that is sustainable, resilient, responsible, diverse, competitive and inclusive by 2030. Research and innovation will play a critical role in meeting these challenges.

It can be difficult to separate food from other areas, themes or sectors. Decisions need to span the conventional divide between consumption and production. They might need to involve knowledge from multiple research disciplines. They will also need to involve the knowledge of citizens, communities, farmers, businesses, city planners and governments. The financing innovation (FI) café group asked: is the entire city budget actually related to food, in various indirect ways?

Box 2: List of World café-style discussion group sessions and acronyms

Food Systems Governance (FSG)
Sustainable Diets and Nutrition (SDN)
Food Production (FP)
Food Supply and Distribution (FS+D)
Food Waste (FW)
Green Jobs (GJ)
Green Public Procurement (GPP)
Financing Innovation (FI)

This results in a definitional challenge for food systems: whose area of responsibility are they, involving what scale of authority or government? Which sector should lead change? How can or should all be involved together? Since they house the greatest concentrations of people, **cities and their surrounding regions are crucial entities in the transformation of our food systems.**

In this context, workshop participants from many different sectors and scales met to discuss the complicated topic of food systems, and several examples of more holistic and inclusive approaches were presented. From a research and innovation perspective, it is really a question of how — and what — to prioritise, and what risks to take and when.

Information and discussion was shared on each of FOOD 2030’s four big priorities (detailed in Section 2):

- NUTRITION for sustainable and healthy diets
- CLIMATE smart and environmentally sustainable food systems
- CIRCULARITY and resource efficiency of food systems
- INNOVATION and empowerment of communities



Box 3. Recommendations, strategy gaps and research needs

Recommendations came up under each of the FOOD 2030 themes: nutrition, climate smart and environmental, circularity and resource efficiency, and innovation and empowerment; some of the more general have been captured below, and also in the Workshop Outcomes Brief, available at <http://ec.europa.eu/research/bioeconomy/index.cfm?pg=policy&lib=food2030>

- **Build a better flow of information and research evidence** (break down the dichotomies) between urban and rural areas and activities.
- **Find ways to overcome the multi-faceted (yet siloed) nature of food issues** in governance: by creating food working groups, public procurement groups; via food policy owned across several departments; by institutionalising policies that transcend election cycles; via ad-hoc departments or offices; via food committees formed from multiple cities in a region; and via long-term political commitment to change. The R&I system in Europe can encourage crucial cross-linkages and common ground between sectors, for e.g. agriculture, fisheries, aquaculture, land managers, retailers and researchers.
- **Don't get weighed down with complexity** (e.g. 'cross-sectoral', 'transdisciplinary', 'quintuple helix'). Most important is to **start talking and keep talking to people**, especially using evidence-based conversation starters and stakeholder engagement techniques. Governance jobs may even have to change, and become more outward-looking and engagement-focused.
- **Having multiple aims is fine** — for example, involving food saving, poverty alleviation and skills share. In fact, meeting several criteria at once seemed to be a feature of several more 'systemic' initiatives that were operationalising or had achieved uptake. Europe's R&I system has an important role to play in promoting joined-up, multi- or transdisciplinary approaches.
- **Know there are tools already available** — from spatial approaches, to GPP rules, etc.
- **Facilitate networking between cities; share knowledge and experience on developing innovative strategies**; there are good-practice examples, including outside of Europe (Toronto, Quito, Mexico and Melbourne)
- **Build the evidence base for the long-term** — on food production and supply, barriers to change, food dynamics within cities, how best to distribute support to cities and regions. R&I investments are well positioned to emphasise long-term, circular solutions for food and nutrition security — both in terms of radical innovation and scaling up solutions that already exist.
- **Regarding innovative platforms and social enterprises** that create opportunities for peer-to-peer interactions, **research needs to be carried out dynamically**. There are several enterprises already available or being developed, and in use.
- **In creating 'online bridges' between citizens, organisations and stakeholders**, digital technologies may form the basis for some elements of future food-sharing systems.
- **In encouraging the participation of and information to the public** on matters of food and nutrition security — and encouraging a socially distributed knowledge and innovation system — R&I systems can be a key enabler.
- **Gaps for urban food strategies** were identified in the areas of integration, jurisdiction, multi-level governance and policy coherence; research links; and inclusion of critical actors.

2. Nutrition for sustainable and healthy diets

A shift in diets, involving a rising demand for protein, staple foods sometime shipped from remote locations, malnutrition and hunger from macro- and micro-nutrient shortages, alongside increases in obesity and non-communicable diseases from unhealthy diets, make up the current global picture for nutrition. A number of technological and public health awareness solutions were discussed to address this priority.

Several new 'game-changing' technologies that could contribute to improved and accessible nutrition were

mentioned, including alternative sources of protein (e.g. micro and macro algae, insects), integrated and vertical farming, biorefineries and other technologies to extract nutrients from waste, and the potential to increase photosynthesis by 1%. John Bell noted the potential for a rise in personalised diets and medicine — personalised 'microbiomaps' — which could take into account bacterial ecosystems, and may mean different demand pressures on food systems in future. Food traceability and accountability is set to increase, and nutrient enriched

foods may become a greater part of the food landscape. A fundamental change within the current situation will require a convergence of many different technologies. (John Bell)

A question brought up by the Sustainable diets and nutrition (SDN) discussion group was: is there a necessary trade off between 'sustainable' and 'healthy'? The group proposed that the fact our food is so integrally linked to the environment means that if diets are more sustainable, they also more healthy — for the whole global ecosystem and for all humans.

It was remarked by SDN that not only nutrition, but also

culture is very important to what we choose to eat, and what is available to eat, and that cultures of cuisine can be very various between cities. This indicates the high relevance of education (one example being positive programmes where as urban children go to learn about food production in the countryside).

The SDN discussion group also remarked that more advocacy and science communication is needed about what actually formulates a healthy diet — there are lots of sources of information on this, and even official information sources are not always up-to-date in their guidance.

3. Climate smart and environmentally sustainable food systems

Climate smart and environmental means building food systems adaptive to climate change, conserving natural resources and contributing to climate change mitigation. This goal seeks to support healthy, productive and biodiverse ecosystems, and also ensure diversity in food systems — including culturally and environmentally. It means emitting less carbon, which means reducing the distance food needs to travel, and making the environmental (and social) connections more obvious ('shorter, more visible value chains'), which means changing the spatial approach for food systems. Making food systems more environmental also means taking into account a large-scale view of land use to accommodate and promote soil health, biodiversity and ecosystem services.

3.1 'Holistic' food systems: a climate-smart objective

In contrast to other cities, in the city of Ghent, the food policy 'Gent en Garde' is based in the climate department. Food Policy Coordinator Katrien Verbeke explained that the policy takes a holistic, 'ecosystem approach' to food. Ghent has gone through a period of further refining and operationalising their policy, under five strategic goals.

- 1. A shorter, more visible food chain** — which, in practice, means improving access to markets for local urban producers, bringing producers and consumers together for e.g. through small catering contracts, and making space for food production using means such as shared gardens. Ms Verbeke explained plans to introduce gardens in the city for private growing, but also to put city grounds on the market for professional urban farms.
- 2. More sustainable food production and consumption** — this can apply to individual, shared or professional scales, focuses on safe production techniques, promotes local, organic, fair trade,

vegetarian and seasonal produce. Sustainable public procurement also plays a part.

- 3. The creation of more social added value for food initiatives** — this involves access to affordable, sustainable healthy food (and looking at the causes of access to food — including cultural and physical); education and knowledge building; social cohesion; and social employment.
- 4. Reducing food waste** — this goal aims for fewer leftovers wasted, and to raise awareness around smart buying, storage and preparation of food.
- 5. Optimum reuse of food waste as raw materials** — including improved waste collection of fruit and vegetables, research and innovation about waste streams, and smarter reuse. Beer produced from old bread is one such initiative, and civil initiatives that reconnect citizens with food-producing environments, such as reintroducing animals into neighbourhoods, are underway.

The municipality runs [an online forum](#), hosting a facility for questions, networking and exchange on more sustainable production and consumption.

3.2 Reducing meat consumption

Reducing meat consumption immediately reduces carbon footprints. In 2009, Ghent was the first city to officially introduce a campaign for 'Thursday Veggie Day', which aims to encourage everyone to eat a tasty vegetarian dish at least once a week. If all Ghent's inhabitants participated, it would result in [CO2 savings equal to 19 300 fewer cars on the road](#); it is also a campaign to encourage people to eat more vegetables. Ms Verbeke reported that the campaign has changed people's eating behaviour, and that the city does have more vegetarian restaurants than most cities. The city of Copenhagen also encouraged lower meat consumption via their public procurement process.

3.3 Biodiversity gains

The renewal and protection of soil was mentioned several times during the day — with regard to one of the essential ecosystem services upholding the food system. Maintaining and actively promoting biodiversity has many benefits: among them, it is a way to protect a sustainable food system by protecting a breadth of genetic resources, which increases the likelihood of species being able to adapt to climate and environmental changes. Organic farming (which reduces the use of pesticides and artificial fertiliser) and the use of multi-crop assemblages (or species ‘guilds’, in permaculture terminology) were mentioned as ways to increase resilience and self-reliance of local food systems.

Copenhagen has worked on producing more biodiversity in the food chain through the public procurement process. As just one example, by including seasonality and diversity as criteria for their public food tenders, they now have a choice of 186 different apples from their suppliers.

The Food Production (FP) discussion group posited a question: how can we feed everyone organically — when there are fewer and fewer farmers? Ms Betina Bergmann Madsen, Senior Food Procurement Consultant for Copenhagen, explained how they achieved an increase from 45% to 90% organic food in public meals, in 9 years, at no extra cost (although there has been a long-term investment in knowledge, education and facilitation of €5.5 million.) The city of Venice has also achieved 80% organic food in public meals, and has enabled urban and social gardening initiatives within the city.

3.4 Territorial food systems approaches

The FP discussion group noted that territorial food policy approaches (particularly, city-region) are necessary because, among other reasons, there is a food-quality gradient between urban and rural areas. They also remarked that there is a need for (and a lack of) food production data at the right scale — especially regarding smaller organic farms, and it would be useful if standardised categories were used.

Several innovative spatial approaches were presented and discussed, as was the need to consider spatial aspects at different scales — urban, metropolitan and global. Dirk Wascher presented an approach using evidence-based tools to find opportunities to redesign food systems — conceived by the [FOODMETRES project](#). One setting for this project is the need to improve rural-urban relationships — and the need for concrete models to do so. Allying an ecological footprint approach with impact assessment, the Metropolitan footprint tool projects the land needed for actual food consumption, allowing supply to be compared with demand at a local level.

The model gives a good impression of concentrations: of livestock, rotation crops, etc., and allows cities to make

Box 4: The Milan Urban Food Policy Pact

An international **pact on urban food policies** signed on 15 October 2015 by cities from all over the world. Provides a starting point for municipalities to create coherent territorial food policies through its focus on sustainable food systems. It acknowledges that cities host over half the world’s population, and therefore have a strategic role to play in developing sustainable food systems and promoting healthy diets. It includes a voluntary framework for action, which includes 37 recommended actions.

<http://www.milanurbanfoodpolicypact.org/>

informed decisions about where they want to develop food supply, develop biomass resources, or develop greater self-reliance in a particular type of food resource. In Milan, for example, there is a far greater supply of rice and other cereals than demand — and a far greater demand of oilseed plants and fruit than supply. Using such a functional, spatial approach to bioresources to integrate local food planning has the potential to achieve a better balance between the macro (global) and meso (metropolitan) spatial scales — and between agricultural and biodiversity concerns. The modelling approach takes one city area — a particular urban setting — and utilises EU land cover categories and data such as the CORINE land cover survey, meaning that the approach can be replicated for other contexts — or compared with Natura 2000 sites, for example. The project is also exploring the potential for eco-district hubs within cities, for example at Porto di Mare, Milan. This would mean that food production hubs could be better connected with food transport hubs — and possibly insulated by food-producing pollution ‘buffers’ — to create solutions with lower energy costs, lower carbon emissions, and less pollution.

Producing a stronger, more responsible link between consumers and their landscape will mean that urban populations will become less vulnerable to global and regional food crisis events, such as climate change or natural disasters (equally, strikes, international conflicts, or perhaps food safety issues). Reducing ‘foodmetres’ also implies changing food exports to concentrate on distinctive regional products with unique selling points, and less on large-scale production of singular crops for remote consumers.

The Food Supply and Distribution (FS+D) discussion group advised that the Common Agricultural Policy might work in a way that enables and allows local food producers to

sell in local cities and urban and peri-urban supermarkets — they posited that this is currently prohibited by high prices, and ‘passive’ retailing. Cooperation between sectors

would or could then be stimulated in a region; for example, between tourism, nature conservation and food supply and distribution.

4. Circularity and resource efficiency of food systems

At present, much food waste is being channelled into landfill. In a truly resource-efficient food system, food losses and waste will be minimised. Creating a circular bioeconomy (where resources left over from one production line will be used as base material for other production lines) will involve the biggest shift since the last industrial revolution; we are in the middle of this shift, and research and innovation plays a crucial role. Resource efficiency is not only about food products, but also about the associated systems, such as finding alternatives to plastic packaging and carbon-intensive transport mechanisms. Food savings, and the efficient use of leftovers is one step in the process, but it was posited by the discussion groups that lots of small changes at this scale have potential to add up to a large impact.

The challenge of how to align demands more closely with needs is very relevant to food systems, since at the moment, they do not match.

4.1 Food redistribution: prevention is better than cure

Eirini Kalemaki, Project Coordinator of the Saving Food project, presented the project’s ICT-facilitated solution to match surplus food with those who need it. Savingfood.eu is an online platform that allows communities to get involved with the redistribution of food. People or organisations can register as food donors, donating food to local organisations that support people with food needs. One of the project founder partners had developed the idea in an offline mode, using phone calls; the innovative step was to move this effective offline model online to create ‘bridges’ and build on the collaborative potential of ICT networks. The online platform has the potential to scale more easily and to be more efficient. Ms Kalemaki noted that the project team has identified many ‘grassroots’ organisations working in a similar area, across Europe, which are struggling to scale through lack of funding; the project team will offer the model and platform, or elements of the platform, as a way to connect these actors.

The group found that a key barrier to saving food, was the lack of awareness – people don’t know how easy it is to save food or to be involved in solutions. Therefore, the platform is also a public space for information about food waste and food saving, and a place to arrange the three main types of food-saving activities, rescuing usable food from compost or landfill; gleaning (collecting

unharvested food from the field); collecting produce left over from farmers markets. Badges, pledges, personal food reports and crowdsourcing will be used to assess behaviour and encourage pro-social behaviours.

There were many other examples of technological solutions to food sharing. The FW discussion group felt that the issue of food waste and saving food was somewhat transpolitical, with an incentive for companies, therefore being an issue that holds a lot of opportunity. The group remarked that better explanation of the rationalisation of expiry date labelling — giving people the critical tools to understand the risk and decide whether something is safe or not — may improve the situation.

4.2 Industrial symbiosis and recycling

Using the waste products of one industry as the base material for another is a key part of the shift to a functional, circular bioeconomy. There were many examples of innovative couple of technological examples given during the day: turning waste from the dairy industry into cosmetics, and waste food being processed to extract usable proteins, nutrients and resources (for example, via [maggot protein or maggot oil, which has been proposed as a new alternative kind of biodiesel](#)). The Food Waste (FW) discussion group discussed that, in the example of food waste, industrial symbiosis needs to involve improvements in multiple aspects: raising awareness of food loss and waste, saving food by facilitation of recovery, redistribution for human consumption of safe and nutritious food, food waste management and distribution, so there is a question about how to do this in a networked or coordinated way.

4.3 Food circularity governance

Who should take the lead in developing local food systems? Should the process be bottom-up or top-down? Somewhere in between? Or both at once? What is the role of local authorities in developing food innovations? And should cities be the actors to set the scene for the surrounding area? These and other questions relating to the level of governance arose in different ways throughout the workshop.

One governance challenge, posed by the FSG discussion group, was how to get all relevant departments in a government working together on food. They also proposed that, if there is the ‘political will’, one

possibility is creating an ad hoc department or office to coordinate the departments that touch on food. Also, food committees formed of people from multiple cities' food offices might negotiate with central government departments, to ensure risk is managed effectively.

4.3.1 Bottom-up or top-down?

Savingfood.eu (above) might be seen as a bottom-up solution — starting with the surplus that is available. An example of a more top-down approach might be a change in public procurement, which exerts a pressure on the rest of the actors in a food system. The process undertaken in Copenhagen, shared by Betina Bergmann Madsen, showed that it takes a committed effort over time, and forethought as to the details of the type of public contract that will achieve the goals.

In order to create a successful public call for tender, Ms. Bergmann Madsen's team engaged with all layers of the supply chain (for example, staff in kitchens, producers and suppliers). Indeed, the team's jobs changed, becoming more outgoing and less desk-based. Extensive consultation aimed to see how the change in public contract would affect people, and to see if the market could meet the new demands being asked of it by the public contract. Copenhagen's public contract for food has changed over the years, to take account of these consultations. An act of municipal diplomacy, the consultations also threw up some beneficial and unexpected findings: for example, that honey is being produced within the municipality, which could be used as a food source as well as for education.

The experiences from Copenhagen showed that there is perhaps a lack of awareness about green criteria or goals (for example, the Sustainable Development Goals (SDGs) or the guidelines available (for example, the [EU Green Public Procurement Guidelines](#), [Buying Green!](#)), even among procurement officers — a perceived lack reiterated by a comment from the Green Public Procurement discussion group. There is now a national procurement officer group in Denmark, which has the aim of sharing knowledge and experience in green public procurement. In addition, there can be internal barriers within organisations, with regard to the value of contracts or threshold values, or a lack of experience of writing 'green' tender documents or applying for 'green' calls to tenders. There is a perception that cost is a major factor, although buying smartly can go a long way.

Ms Bergmann Madsen remarked that progress against the larger goals (for example, 100% organic public procurement) is made by making many small changes at many levels. It is also beneficial to provide some advantages for engaging, for example, by giving suppliers who are making small changes a chance to get a contract with the municipality. Next steps for Copenhagen are to work to shorten their supply chains, and to enable networking between procurement officers and suppliers.

One issue advanced by the FS+D discussion group was that there is a shortage in business-to-business sustainable food-supply arrangements — and that this is difficult to promote. Reference was made to the EU procurement rules not sufficiently encouraging local food (shorter food supply chains) — and to where local, regional or national policies can come into conflict with city policies.

4.3.2 Political commitment

The team behind the IPES Food Panel report, [What makes urban food policy happen? Insights from five case studies](#), asked what are the factors that enable policy development and delivery in cities — and how to overcome the barriers? Political commitment was seen as a prerequisite by the authors of the report, which analysed food policy processes from five different cities, in terms of their food-policy 'ingredients for change' (Belo Horizonte, Brazil; Nairobi, Kenya; Amsterdam, Netherlands; Golden Horseshoe, Canada; and Detroit, U.S.). Corinna Hawkes and Jess Halliday presented some key lessons from their research, including some key 'enablers'.

The cities studied made several innovations to overcome their barriers — finding ways of extending budgets, institutionalising policies to transcend election cycles, and obtaining new powers where they didn't exist before. Whether the policies were initiated from the top or the bottom, the authors found that an inclusive process is what matters most, to align needs with policies and create a broad support base to aid implementation.

Ms Hawkes said that the 'overarching key message is the need for political commitment', which could take the shape of a dedicated food agency for a city or perhaps specific food rules that run across different municipal departments. The IPES report also makes the case that cities are on the rise as agents of power with regard to food policy.



5. Innovation and empowerment of communities

5.1 How to engage communities?

The governance discussion group asked: how should cities engage community groups? Similarly, John Bell posed the question: should research and innovation regarding nutrition have a focus on specific groups? If so, which groups? The elderly? The young? The economically, socially or physically disadvantaged? Immigrants? Allergenic people?

Engaging SME owners and farmers can be challenging because they may not have either the time or the inclination. Engaging CSOs already working with, and providing value to, these groups might therefore be more effective, or working with nominated ambassadors who then act to feed back to the community (FSG). It was seen as essential not only to engage community groups — but also to take the information they provide into account in policymaking, so as to build, not burn, bridges with these communities. In Copenhagen, the public procurement consultation team fed back to consultees — to try to ensure that no parties felt alienated from the changing public food system.

The experiences in Venice, Copenhagen, Ghent and the FoodMetres project all show that a more direct market dialogue is both possible and beneficial. FoodMetres used the spatial evidence generated by the project as a conversation starter to engage potato farmers in the Rotterdam area regarding opportunities to change land use and increase fruit and vegetable production, and what it will mean for the ecological footprint of Rotterdam. Mr Wascher remarked that this use of the evidence seemed to work well; at present potato agriculture is very export-oriented, and the community of farmers were interested in forging stronger links with the city, and becoming more visible to local populations.

5.2 Food systems approaches including social goals

Many projects presented had multiple aims, linking society and food systems in a closer relationship. In fact, meeting several criteria at once seemed to be a feature of several more 'systemic' initiatives that were operationalising or had achieved uptake. In the city of Ghent, the theme of vegetarianism (Veggie Thursdays) acts as an entry point to raise awareness on both public health and the environment.

Federico de Rossi, who acts as a facilitator between the city's departments, presented operational strategies for Venice: a city that is also a fragile environment. Mr de Rossi focused on a wide variety of local projects with a strong social orientation, and involving people from throughout the agri-food chain, which are implementing Venice's urban food approach. The city has recorded 40 projects in 4 years, using very limited funds, and it has also produced the 'Fuoriorotta ('Off-course' i.e. 'Detour') Map, for visitors

to experience and discover the 'other' Venice: farmers' markets, craftspersons' and fair-trade shops, secondhand shops, green parks, water refill points and organic and zero-mile food.

The city's strategy also include food provision for the poor and disadvantaged. The city's 'soup kitchens' — which are run by private, volunteer and church organisations — often utilise informal deals between organisations to redistribute food. The Milan Urban Food Policy Pact — to which Venice is a signatory — is explicit that food systems need to be not only sustainable and resilient, but also equitable, and that good policies are closely related to many other urban challenges and policies, including poverty and social protection.

Some of the featured projects include the Merenda Sana project, which worked with local traders to guarantee that 'healthy snacks' are available for school children at reasonable prices, the Refill project, pushing citizen awareness towards issues of water quality and reuse of bottles, and Aeres, where members are social cooperatives, farmers or sustainability actors, who have created a local, sustainable economy pact. Mr de Rossi suggested that the city will continue to create more synergies: between research departments, the city authority and the private sector.

As a very direct method of empowering communities, where citizens are able to co-create solutions, Mr de Rossi remarked upon Cittadini in fatti — a public project for non-formal groups of citizens who attend thematic meetings to discuss and share knowledge about possible changes towards more sustainable lifestyles (for example, The Family Budget; Food Labels; Bills and Savings), and to raise participation, awareness and responsibility on the issue of social and economic vulnerability. 7000 citizens have been involved by active volunteers so far; the annual budget is €700 euros. Citizens deal with the whole process of the meetings themselves, which also provides opportunities for skills development.

The experience in Venice showed that the implementation of food systems projects, especially with a social dimension, can encourage the formation of green jobs — for example, employing disadvantaged people in farmers markets.

5.3 Making space for non-professional farmers

Making space for non-professional farmers, and empowering people to grow their own food, seemed to be a key operational goal in both Ghent and Venice. Finding opportunities for urban and social gardening can take many forms. For example, part of the Gent en Garde website is dedicated to 'garden sharing' — where people wanting a

garden can find and contact people willing to lease part of their private garden for growing vegetables. There is also a gardening project on a brownfield site, owned by a residential care centre, which provides vegetables and herbs for a nearby restaurant, is a social employer, and engages the elderly residents on gardening matters. In Venice, there are garden projects engaging immigrants, allowing opportunities for social integration as well as building resilience.

More accessible, city-led information about professional and non-professional composting streams and techniques may also be beneficial (FW discussion group).

5.4 Social entrepreneurship and sharing economies

Empowerment can take many forms, but many cities and projects have been using socially entrepreneurial or sharing formats, including peer-to-peer platforms, apps and social media, to enable communities to make changes to the food system between themselves. In the socially engaged Savingfood.eu platform, the focus is on highlighting opportunities to save food, connecting people and organisations, as well as providing information to change food behaviours. The project also aims to encourage ambassadors or human sensors in communities, and the platform acts as a bridge between actors. Similarly, FoodCloud, from Ireland (which is in a partnership with a UK supermarket) is a platform linking up registered food retail companies and charities (for example, breakfast clubs, homeless hostels and family support services), allowing them to receive surplus food and make savings on their food costs.

Databases are also being utilised to build the knowledge economy on food sharing. Presenting research from the [Sharecity project](#) (Assessing the practice and sustainability potential of city-based food sharing economies), Anna Davies explained that Sharecity has built a database of food-sharing activities by more than 4000 enterprises across 100 cities in 43 countries in 6 continents. Ms Davies noted that when people were asked to imagine sustainable food futures, people imagined that food would be more collaborative. Motivated by the fundamental nature of food sharing, the rise of the sharing economy and the need for sustainable consumption, the project is studying the transformative potential of urban food sharing, asking whether there are recognisable geographies of food sharing.

Ms Davies noted that food sharing is a dynamic arena — organisations are continually appearing and disappearing — and also that most organisations studies practice

multifunctional sharing. That is, more than 70% share more than one thing – produce, opportunities, meals, knowledge (e.g. King's Cross Skip Garden, London, UK, which shares, knowledge, skills and food). Also, most enterprises are at the lower complexity end of the ICT spectrum — although 86% of cities studied had at least one app.

Some 'quick win' projects such as encouraging the use of 'doggy bags' — to take home leftover food from restaurants have worked on behavioural barriers. Food Savers in Ghent — a strategic platform — found that centralised support means that scaling-up could happen more quickly.

Successful, scalable enterprise is often dependent on financing, funding or investment. The FI discussion group asked: How are governments prepared to finance a project with a social value? Impact investment, via green bonds, and crowdfunding were advanced as two possible solutions. The group suggested it would be beneficial to develop risk-based decision tools for governments and funding organisations in this area.

Other social enterprises dedicated to saving and sharing



food and using food surplus include TooGoodToGo (founded in Denmark, and now available in UK, Norway, Germany, France and Switzerland), where local restaurants, cafes and bakeries can communicate directly with citizens about lower price packages of surplus food, via an app. Or FoodCycle, UK, which uses leftovers, (collected by bicycles), to provide meals (cooked in spare kitchen space) for hungry and lonely people, and provide a supportive social environment. FoodCycle has paired up with Feedback, a gleaning organisation, to encourage cycling and kitchen volunteers to also become gleaning volunteers (collecting surplus food from the fields), and vice versa.

5.5 Green jobs

Green jobs — the theme of EU Green Week 2017 — was also an important theme of the workshop, and many opportunities for potential green jobs in a more connected food system were identified — especially in small-scale production, intermediary redistribution and food reuse organisations. With regard to food systems, it was noted that perhaps there is an issue with the extent of professionalisation — the extent to which the ‘greenest’ jobs (e.g. food redistribution, education about cooking with leftovers or recycling personnel) are seen as valuable or as having a viable (competitive?) place in the market. Many current ‘green’ food jobs, enterprises and initiatives are both free and volunteer-run. This is supported by evidence from the ShareCities project, which found the majority of the more than 4000 enterprises studied relied on a gifting model — and only a third involve monetary exchange. The ‘precarious’ nature of food sharing enterprises was highlighted: as well as the range of potential labour and work and potential for job creation.

The Green Jobs (GJ) discussion group felt there was no universal agreement as to what constitutes a ‘green job’. (Is wind farm construction, which involves laying concrete and disrupting habitat, a ‘green job’? Is social work with children and teenagers in a rural setting a ‘green job’? Do unemployed urban growers illegally farming a piece of disused land have a ‘green job’?) It was agreed that the term ‘green jobs’ had the capacity to be very broad, and cover many sectors and service levels — potentially, every activity relating to a ‘greener’ environment, at any scale. It may be more beneficial to pose the term as something that is co-defined, or self-determined, rather than fixed; standards will anyway evolve and shift as the general idea of ‘green’ and ‘sustainable’ evolves. If organisations are making ‘small changes’ — as in the case of Copenhagen — then those are becoming ‘greener’ jobs, and this is perhaps most crucial.

The question of how to create more green jobs is fundamentally linked with abundance or deficit of skills and the viability of such jobs in society and the market. There seems to be a lack of research and understanding on some of the social aspects of sustainable and green jobs. It was thought that the opportunities to be employed in a green job start in (early) education, and this begs the question: should we be talking about green livelihoods, rather than green jobs?

Small and medium enterprises, multinational corporations, civil society, changing workplace practices and the labour market as a whole were all seen as having a part to play to generate ‘green’ jobs. The GJ group also mentioned the impact of local currencies and local trading networks — of which there are hundreds in Europe (such as the

Bristol pound, UK, the Fasouli Network in Greece, the Abeille, France, the OSEL, Spain, PRALETS, Czech Republic, Ekhi in the Basque Country, and the Chiemgauer (and eChiemgauer), Germany, to name a few). It was thought that, in places where they are operable, while not always forming a significant part of the economy, they have value as a communication tool about shortening local value chains.

As well as enabling functional metropolitan design, the FoodMetres method may enable cities to take better stock of the density, and accessibility, of green jobs. This could be used to inform where and whether to create regenerated ‘centres’ for green economy activities, such as the Porto di Mare area of Milan.

A question posed by the GJ group was: are we approaching a ‘turning point’ on the horizon, where green jobs, industries and sectors are becoming more competitive, and industries are starting to devise business models that work? An example was given of solar panels, which are slowly becoming more competitive in the marketplace. Bearing in mind that solar technologies have needed to be subsidised to achieve those advances: do other types of ‘green jobs’ have to be similarly supported, stimulated or subsidised to make the transition into the marketplace?

5.6 Urban food leaders: a particular role

‘Urban food policies can be transformative by supporting diversity of supply chains. That includes local supply chains but that also includes the big supply chains that have tremendous power over the system’

Corinna Hawkes

for cities

Cities are often perceived as setting the rules, but can actually be somewhat limited in practice. The FSG discussion group proposed that there was a need to let cities make informed decisions about where to develop food supply. Through city networks, individual cities could share knowledge and solutions and opportunities with others. The FP group remarked that it is not as simple as having a single, overarching policy for an entire state, since cities don’t have or want the same type of food as each other. Additionally, to create a sustainable urban food system, we as urban citizens may have to change our habits too (FP).

Early results from the [EC ‘Food in Cities’ project](#) (DG

Research and Innovation-funded) were presented by Anja de Cunto. The project has so far been mapping innovative urban food strategies in cities across Europe and using a few innovative examples from the rest of the world (for example, Toronto, Quito, Mexico and Melbourne). They found that 28.9% of cities studied had a comprehensive food strategy, policy or plan, and that 5.3% had no strategy/policy or plan at all. They found less information was available from East and Central Europe and that, often, the plan sat within only one government department, so there was limited action possible. Strikingly, they found that many of even the most ambitious cities in the EU have only been working on a food strategy, policy or plan for the last 4-6 years — and that the strategies take time to implement, since there are so many different stakeholders to involve.

It was found that the main tool used to effect the strategies studied was citizens involvement and social innovation — and that public procurement seems to play a bigger part than regulatory innovation or financing instruments. These tools were different for countries outside the EU, where tech-based solutions had more prominence — yet the types of issues and solutions are very similar whether in Europe or outside, and whether it is a small or large city being studied. Some trends they found among strategies were:

1. **Community buy-in.**
2. **Enhancing participation.**
3. **Local empowerment as a policy goal.**
4. **Shortening food-supply chains.**
5. **Systems thinking.**
6. **Trans-localism (a need to know what other cities are doing).**

Several gaps for urban food strategies gaps were identified through the project — in areas of integration, jurisdiction, multi-level governance and policy coherence; research links;

and inclusion of critical actors. Some have reported issues with initiatives that are problematic to fit in pre-existing categories; Ms de Cunto gave the example of instigating vertical farming, for which the Cataluña government have had to request permission from 5-6 different parties.

Several groups proposed that cities might host 'living labs' to test models of practice. City Deals, part of the [Dutch Urban Agenda](#), which involve concrete cooperation arrangements between different levels of government, business, civil society and other stakeholders — were mentioned several times. The FSG discussion group proposed that a smart approach for interlinked cities might be via pre-existing city networks, like the [Covenant of Mayors](#).

Ghent's approach has been to utilise working groups between city departments. For example, all requests from anyone on issues regarding use of space are covered by the working group. This would mean that, if a civil initiative wants to use a park space to make an urban garden, it is not only the parks department that decides; when they receive a spatial request, the working group will look at different solutions to provide people with the best outcome for all. The city's online platform also facilitates networking and exchange, meaning that the policies are implemented on different levels.

Cities are dynamic entities with an active role in fostering food-systems innovation and green, food-related jobs at the local level. The discussions at this workshop suggest that there are many innovative groups already working at many different levels, but that there is more to be done to empower and mobilise cities to connect up the food system actors within and surrounding them, and to improve cooperation and system flows. The decisions made by Europe's research and innovation system in the coming decade will certainly affect the success of the integrated systems necessary to create a truly joined-up, sustainable system for food and nutrition security in the long term.

Future-proofed food systems: sustainable, resilient, responsible, diverse, competitive and inclusive by 2030

About this Workshop Outcomes Report:

This Workshop Outcomes Report is based on the records from a workshop, Cities for Food Systems Innovation and Green Jobs, (31st May 2017, EU Green Week 2017 official side event), hosted by the FOOD 2030 team of the Bioeconomy group in DG Research and Innovation, which provided an opportunity to explore the role of cities in future-proofing the food system. For a shorter summary, see the FOOD 2030 Workshop Outcomes Brief, *Cities for food systems innovation and green jobs*, available at <http://ec.europa.eu/research/bioeconomy/index.cfm?pg=policy&lib=food2030>. Written and prepared by Ruth Larbey, Science Communication Unit. This Brief does not necessarily reflect the position of the European Commission, and the European Commission is not liable for any use made of the information contained therein.

