FOOD IN CITIES: STUDY ON INNOVATION FOR A SUSTAINABLE AND HEALTHY PRODUCTION, DELIVERY, AND CONSUMPTION OF FOOD IN CITIES

First report: Mapping innovative urban food strategies designed to promote the production, delivery and consumption of sustainable and healthy food

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Food in cities: study on innovation for a sustainable and healthy production, delivery, and consumption of food in cities.

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List of abbreviations

EC: European Commission

CS0s: Civil society organisations

DG DEVCO: Directorate General for Development and Cooperation

FAO: Food and Agriculture Organisation

MUFPP: Milan Urban Food Policy Pact

WG: Working group

Aims and objectives of the study

This report is part of the 'Food in cities: study on innovation for a sustainable and healthy production, delivery and consumption of food in cities' project.

The main aim of the study is to gain a better understanding of the dynamics is food innovation in cities, and to clarify the role the EU's research and innovation projects can play in supporting them.

The study is composed of three consecutive actions:

- TASK 1 (December 2016-April 2017):
  Mapping innovative urban food strategies designed to promote the production, delivery, and consumption of sustainable and healthy food.
- TASK 2 (April 2017-June 2017):
  Compiling five in-depth case studies from cities that have benefitted from EU projects supporting innovative solutions for sustainable and healthy production, delivery, or consumption of food in cities.
- TASK 3 (July 2017): Production of the final report.

The study was commissioned by the European Commission's DG Research and Innovation under Framework Contract 30-CE-0833121/00-49.

Executive summary

The document aims at providing an overview of the food innovation dynamic in European cities, also citing examples from cities around the world. Its findings are based on input provided by MUFPP signatory cities through a survey, interviews, and focus group meetings.

For a long time, food production had been considered to fall beyond the sphere of competence of cities, mainly because food is normally produced outside the city limits. Now there is a growing recognition of the new role local authorities can play in the development of sustainable food systems.

Cities implement their food-related activities differently: some develop comprehensive strategic documents and long-term plans, while others still work on separate policies and actions. However, the long-term ambition for cities is to define a comprehensive and sustainable strategy.

In cities which are working on food related policy or projects, we noticed six types of innovation dynamics.

1. Emphasis on community buy-in: in contrast with conventional food policy approaches, which tend to be designed and implemented top-down, cities see the role of the state as that of a facilitator.
2. Enhancing participation in the governance system. Because of their emphasis on community involvement, cities are devising innovative governance approaches and mechanisms that aim to enhance civil society participation in the design and implementation of food policies.
3. Local empowerment as a policy goal: enhanced participation in urban food policy is pursued not just to find support for a city's food vision, but also, crucially, to empower all food system actors and to enhance social inclusion.
4. Shortening food supply chains. Importantly, empowerment also has a tangible dimension: it entails a widespread effort to give visibility to the existence or lack of socio-economic and environmental relations and connections that shape the urban foodscape.
5. Systemic thinking. By making the food chain visible, city governments are clearly finding it easier to develop an innovative systemic approach to food policy by moving beyond the production-consumption divide that historically characterises food policy making.
6. Translocalism. Another important innovation introduced by city governments has to do with the establishment of translocal networks that aim to enhance knowledge exchange and cooperation between urban areas.

The types of policy tools used by cities include: citizen involvement and social innovation; governance; innovative public procurement; and collaboration with research. Some differences in the tools used and the types of actors involved are found according to the working areas related to food where cities can be active: governance; sustainable diet and nutrition; social and economic equity; food production; food supply and distribution; food waste.

The framework conditions of cities do not seem to play a key role in influencing the development of a city's food strategy or actions. Similar activities can be observed in different geographical contexts and in cities of different size.

The role of cities in food

For a very long time, food had been considered to fall beyond the sphere of competence of a city, mainly because food was produced outside the city limits, and its externalities had been discarded (Potukuchi and Kaufman, 1999[1]). The rapid urbanisation of the past few decades in Europe and across the globe has led many to develop a negative view of urban environments as major contributors to social, economic, and environmental challenges.

However, in recent years, there has been a shift in the way we view food systems, which contributed to the recognition of the emerging role of cities in the development of sustainable food systems: food production and consumption are not seen as two separate processes any more, but as an integrated and connected one.

Food is clearly an emerging issue for urban agendas, and stakeholders at the local level –public, private, academia, and civil society sectors – are reasserting their responsibility for food policy. Both in the Global North and in the Global South, local authorities have started to promote local and organic food, fair trade products, food waste reduction, and urban food growing initiatives (Sonnino, 2016[2]).

In 2001, FAO launched the 'Food for the Cities' initiative, which looks at the need to invest in cities and urban food programmes to ensure fairer conditions to rural populations, particularly in southern countries. The process is a specific response to the need created by the issue of 'food security', particularly in the developing countries.

In the early 1990s, a few pioneering cities in the world began to develop food strategy and food policy councils (see below). For example, the Toronto Food Policy Council was launched in 1991 to advise the city on food policy issues, as well as to serve as an advocate for community food security strategies and to foster dialogue between stakeholders across sectors.

In Europe in the last few years, cities are becoming increasingly involved in food related work. An indication of this renewed interest is the emergence of EU-funded projects, which involve local authorities and focus on urban food strategies and actions.

One of the key steps in the recognition of cities as food policy actors was the creation of the "Milan Urban Food Policy Pact" (MUFPP), led by the city of Milan and initiated in the framework of the Food Smart Cities for Development project, financed under the DEAR funding programme of DG DEVCO. The specific objective of this project was to create a network of Food Smart Cities, and to guide European local authorities and civil society organisations in drafting, developing, and implementing local food-related policies. Another important initiative is the Food Policy Networks project, currently being developed by the Centre for a Liveable Future at Johns Hopkins University in the USA, which aims to enhance and amplify the impact by "building the capacity of local, state, regional, and tribal food policy organisations to forge working partnerships and to become more effective policy players" (Center for a Liveable Future, 2015)[3].

[1] Pothukuchi, K. and J. L. Kaufman (1999) Placing the Food System on the Urban Agenda: The Role of Municipal Institutions in Food Systems Planning". Agriculture and Human Values, 16: 213-224).
[2] Sonnino, R. (2016) The New Geography of Food Security: Exploring the Potential of Urban Food Strategies. The Geographical Journal, 182 (2): 190-200
[3] Center for a Liveable Future (2015) Food policy networks [WWW Document]. *Center for a Liveable Future, Bloomberg School of Public Health, Johns Hopkins University*. URL http://www.jhsph.edu/research/centers-and-institutes/johns-hopkins-center-for-a-livable-future/projects/FPN/

The rise of comprehensive urban food strategies

Cities implement their food-related activities differently: some develop comprehensive strategic documents and long-term plans, while others still work on separate policies and actions, often led by different city departments.

In Europe, few cities have developed comprehensive food strategies, among them Ghent, Bristol, Edinburgh, and London.

Research findings suggest that food strategies can be the result of cities' own initiative; of a synergistic collaboration among cities[4]; or of a participative process, in which the municipality is acting as facilitator involving a wide range of stakeholders.

Interesting among these is the case of Vitoria Gasteiz: the city administration was not the main driver of the food strategy development. The city's agri-food strategy is the result of several years of work by different citizen associations and private actors in a series of stakeholder meetings. Another example is Milan, where more than 1,000 stakeholders from academia, civil society, and public and private organisations took part in the creation of the city's food policy.

Other cities have yet to produce overarching food strategies, although various actions have already been implemented in different food-related areas. The city of Utrecht, for example, prefers not to set strict policies. Instead, it wants to remain action oriented. Other Dutch cities, such as Rotterdam, have a similar approach.

However, for many cities the ambition seems to be to develop holistic strategies that encompass and integrate all the areas of work related to food, social economy and integration, environment, and health (see below). Such a holistic and integrated approach enables them to tackle the complex issues that cities must face today (growing population, finite resources and space), and also to adopt a long-term policy approach that remains applicable in an ever-changing political landscape (Figure 1).

The reasons why cities want to develop urban food strategies include:

- Enhance food security and nutrition;
- Improve the livelihood of urban and peri-urban food producers, and promote job creation and economic development;
- Protect and restore the local ecosystem, reduce climate impact, and increase climate adaptation by increasing green areas.

[4] For Brussels, Ghent, Turin, Bruges, and Zaragoza, the creation of a food or policy for the city was the result of interaction and further collaboration with other European cities through EU-funded projects (URBACT, INTERREG, and LIFE+).

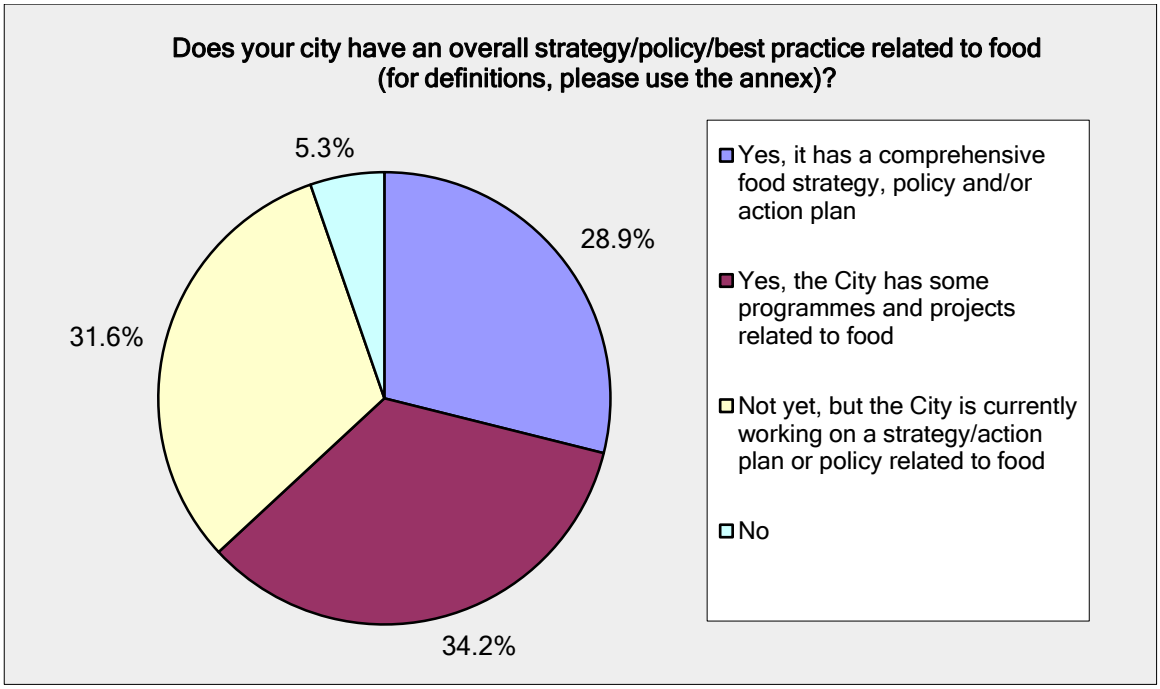

Figure 1 Percentage of cities with strategy, policy, or best practice related to food

Urban food strategies across cities seem to entail a similar range of themes and actions, even if the main drivers and priorities for each city can differ according to the local context.

- Health and wellbeing (e.g. improving access to healthy food, particularly among youngsters)
- Environment (e.g. reducing carbon emissions, being more energy efficient, reducing food waste)
- Economy and community development (supporting local growers, retailers, markets, and employment)
- Food security/social justice (e.g. fighting food poverty, improving access to affordable, culturally diverse, and healthy food, fairness in the food chain, a just food system)
- Learning/empowerment (e.g. life-long learning)
- Urban-rural linkages (i.e. connecting city and the countryside to shorten the food chain)

It is to be noted that the development of food strategies often supports the creation of internal governance mechanisms (such as a food department, food policy councils, or partnerships) in the city, which are responsible for the further development or implementation of food-related policies and projects (Figure 2).

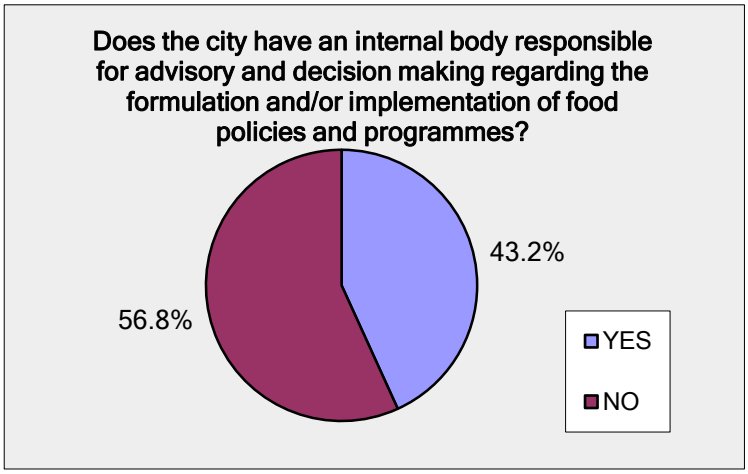

Figure 2 Presence of internal bodies responsible for making food-related decisions in cities

The configuration of a food policy council is different in each city.

In certain cities, a newly appointed person/department is responsible for food policies and projects, working with cross-departmental teams.. In Milan, for example, the person in charge of food policies and projects reports directly to the mayor's cabinet.

Other cities have historically seen their food policies led by designated departments. For example, in Birmingham and Mexico City, food-related issues are handled by the social health department, while in Brussels and Tel-Aviv, it is the responsibility of the environment department. In Barcelona, the person in charge is the commissioner of cooperative economy, social solidarity, and consumption.

Yet other cities, like Preston and Melbourne, have official steering groups at city level composed of members of different city branches. In Mollet del Valles and Ljubljana, by contrast, informal groups of co-workers are asked to collaborate on a case-by-case basis.

In many cities, formal working groups are established that bring together city officials and key external stakeholders. For example, Bruges City Council has a Food Lab[5], an advisory and action group that includes different stakeholders who work together with policy makers on three specific topics (urban agriculture, short food chains, and food waste).

Also noteworthy is the Dutch City Deal, in the strategic framework of which 12 cities and three ministers debate and enhance food policy-related and agrifood topics.

[5] https://www.brugge.be/brugsfoodlab

Innovation in urban food

More and more cities are becoming living laboratories, where innovation activities are carried out in real-life contexts, generating effective and practical solutions. Many of these innovative practices originate with private citizens, CSOs, or NGOs. It is important for cities to create mechanisms that enable the emergence and recognition of these practices. This then makes it possible for city councils to support and scale up these innovations. Examples include: turning vacant lots into fruit and vegetable plots for community integration; incentivising restaurants and supermarkets to cut food waste by donating their unused food to food pantries; introducing the principle of social and sustainable purchase in their public procurement processes; and launching education campaigns to ensure that healthy food is recognised and consumed by the public. In other words, the important role cities can play today is that of facilitator and enabler.

The creation of urban food strategies is innovative by definition. Urban food strategies are informed by a holistic approach that aims to scale out and scale up new methods, ideas, and products emerging from the private sector (such as startups), CSOs, citizens, and industries.

Some 75% of the cities that participated in the survey consider their food-related work innovative, albeit for different reasons. For example, representatives of Paris and Melbourne believe that their approach to food is innovative because they were the first to initiate policies and regulations that were then adopted by other cities or nations.

The representative of 's-Hertogenbosch said that their strategy has a strong focus on innovation within specific themes, such as agrifood and health, agrifood and circularity, and agrifood and technology.

Barcelona‘s innovation lies in its strong cooperation with different actors involved in health issues (such as the Ministry of Health and the Spanish Network of Healthy Cities), and their approach also incorporates the concept of ’food sovereignty’.

Ljubljana also considers its strategy innovative as it has a “*holistic approach to rural development and food production with long-term goals and constant presence on the field and personal approach. Programmes are arising out of concrete problems and ideas of food producers*”.

Mexico City describes its nutritional and food security system as innovative because it coordinates the food and nutrition-related strategies and actions initiated by several secretariats. The city strengthens these and promotes the efficient coordination of the different city departments’ work.

Milan and Vitoria Gasteiz consider their approach innovative as it was co-created with several different stakeholders in a long engagement process. The representative of Bruges mentioned that his city stimulates innovation by encouraging small-scale innovative projects.

Quito’s approach to its food system is considered innovative because “*it solves one or several problems, it is an idea that generates value for others, replicable, sustainable, and generates new relationships of collaboration. It is innovative on the double: because it generates something new for society and, on the other hand, able to act in society*”.

Elements of innovation

Taking into consideration the elements collected by the study, the following main elements can be identified in the local authorities' food-related activities (Sonnino, R. forthcoming).

These are also summarised in the image below (figure 3).

Figure 3 Innovation elements in urban food

1. Community buy-in

In contrast with conventional approaches to food policy, which tend to be designed and implemented top-down, cities see the role of the state as that of a facilitator. The general trend in Europe is towards decreasing the governments' involvement in the development of food policies.

As stated by Utrecht's representative, "the government facilitates and connects, but does not take the lead by developing a policy; civil society and the private sector should spur innovation, with the government providing institutional support and political backing".

In practical terms, this approach means that city governments are creating space for bottom-up, community-led food initiatives (such as the 'community fridges' in Bologna and Brussels, where WhatsApp groups have been formed in neighbourhoods an even buildings to share food that would otherwise go to waste) to emerge and develop on their own.

Vitoria-Gasteiz considers its food strategy innovative because it was initiated by civil society, and "the government adhered to it afterwards". Likewise, Milan considers its emphasis on "stakeholder engagement" in the design of its food policy a key innovation.

For many city governments, the main governance goal is to find ways to connect bottom-up and top-down food strategies. Outside Europe, this goal is exemplified by Quito's successful model of 'institutionalisation' of urban agricultural initiatives. Another important example of community buy-in is provided by the Comedores Comunitarios (community dining rooms) in Mexico City. Established in 2009 with the aim of feeding the urban poor, the Comedores Comunitarios (106 in 2016, serving more than 8,000 meals per day in the most deprived areas of the city) are governed through a partnership between the city government, local communities, and the private sector. The city provides technical, administrative, and economic support, as well as non-perishable food from the central wholesale market, and water donations from the central municipal system. Groups of local residents establish and manage the dining rooms, and the private sector collaborates by providing donations and maintenance services.

2. Enhancing participation in the governance system

By emphasising community involvement, cities are devising innovative governance approaches and mechanisms that aim to enhance civil society participation in the design and implementation of food policies.

In many cities, community groups and civil society organisations have left the margins of the political arena and are actively collaborating with municipal policy makers. Turin, for example, has launched a "strategic plan" to engage with as many as 45 food system actors, and has established a "food commission" that involves the private sector, public sector institutions, and universities. The key governance body is the food policy council – a voluntary entity, made up of stakeholders from across the food system - which has the mandate of examining how a food system operates, and of providing advice on how to improve it. "Food councils" represent an important advisory/feedback mechanism in cities, such as in Ghent and Bruges. These involve a wide range of actors – as opposed, for example, to cities like Birmingham, where the lack of participation by the private sector in particular has hampered the effectiveness of the city's food council. Significantly, Bruges has invited its regional government to join their "food lab". Although food policy councils are more widespread in the global north (particularly in Canada and the USA), there are important examples of similar mechanisms in the global south as well – particularly in Medellin (Colombia), Belo Horizonte and Rio de Janeiro (Brazil).

In Melbourne, the establishment of a "food policy working group", formed by key stakeholders from ten different departments, has been instrumental in supporting not just the formulation of the city's food policy, but also in its development and implementation.

3. Local empowerment as a policy goal

Enhanced participation in urban food policy is pursued not just to find support for a city's food vision, but also, crucially, to empower all food system actors and to enhance social inclusion. Using a language that resonates with the fundamental principles of the "right to food", "agro-ecology" and "food sovereignty", urban governments are devising initiatives that target the most vulnerable segments of their populations.

Turin, Venice and Ghent, for example, are involving refugees and unemployed citizens in the collection and recycling of food waste. Gothenburg has placed "solidarity fridges" in its "sharing economy shops" to enable citizens to donate unutilised foods or leftovers to the poor as an alternative to the food bank model. All European cities provide support for community gardens, with some governments (e.g. Almere) also working to overcome the stigmatisation associated with these initiatives. Outside Europe, one interesting example is the Edible Gardens of Arusha (Tanzania). Working with NGOs and other local partners, the city has established 200 gardens and a local horticultural market in one of the poorest neighbourhoods, with the dual goal of enhancing biodiversity and improving food security. In addition to playing an important role in teaching residents how to grow healthy food, the Edible Gardens have recently been successful in empowering a group of 30 low-income women, who have established a cooperative through which they sell their produce to a restaurant in the city centre.

4. Shortening food supply chains

Importantly, empowerment also has a tangible dimension: it entails a widespread effort to give visibility to the socio-economic and environmental relations and connections (or lack of) that shape the urban foodscape.

The creation of "a more visible food chain" is the first strategic goal pursued by the city of Ghent. A similar (but less explicit) objective is embedded in London's recent decision to weigh garbage bins in restaurants "to show them how much waste they produce and how much money they lose". A pervasive emphasis on the need to promote Fair Trade products in public canteens is an example of the strategy used to shorten the social distance between producers and consumers. In some cases, European cities are actively working to decrease or even eliminate the physical distance between food chain actors. Initiatives of this kind include a very successful local box scheme in Almere; an online system introduced in Lyon to increase orders at the farmers' markets by enabling customers to collect their food at their own convenience; and the "Urban Gardens Network" established in one of Venice's largest islands to facilitate the distribution of local products and, at the same time, organise food educational initiatives for citizens. Ljubljana has a specific "short" or "green" food chains initiative in place, coordinated by the Department for Environmental Protection. Zaragoza aims to achieve its food sovereignty by using fruit and vegetables produced in the urban and peri-urban gardens to supply schools and social canteens. In Paris, the "Plan Alimentation Durable" (Sustainable Food Plan), implemented in the city's public canteens (including schools), has explicitly emphasised localness and seasonality as a means to shorten the distance between production and consumption, achieving the remarkable result of more than 77% of fruit and vegetables served in the city's canteens currently sourced from within

250 kms. One of the most successful examples in this realm is Belo Horizonte's "Food Security Programme", which has been entirely designed around the need for reconnecting urban food consumers (particularly those in poor areas of the city) with small-scale farmers located in the metropolitan region. The main initiatives implemented to facilitate this reconnection include the establishment of "popular restaurants", where vulnerable citizens receive healthy meals prepared with fresh local ingredients at a discount price, and the widespread use of local foods for the city's food bank and to prepare schools meals (360,000 are served every day).

5. Systemic thinking

By making the food chain visible, city governments are clearly finding it easier to develop an innovative systemic approach to food policy. Moving beyond the production-consumption divide that historically characterises food policy making at the global and national levels, urban governments are focusing their intervention on other stages of the food chain, particularly waste, which they see as "a key governance challenge".

Antananarivo's main aspiration, for example, is to formulate a food policy that embraces "related issues, such as urban agriculture, waste management […,] reducing food waste, food sharing and the reinforcing of processes for food production and food value chains". Athens and Gothenburg utilise household food waste to produce, respectively, compost and biogas for the city's buses; Birmingham has two initiatives in place to turn hospital food into compost that is utilised to grow vegetables for hospital meals. Systemic thinking also informs the "Right Price Menu" initiative in Porto, where restaurants have been asked to reduce portion sizes and costs to decrease waste but also to make their meals more accessible for low-income people. In some cities, systemic thinking has triggered investment in infrastructure, particularly urban food markets (Barcelona and Tirana), and the establishment of "food hubs" (Lyon). Outside Europe, Mexico City's "Healthy Cookbook" initiative aims to boost local production through the promotion of recipes that are also affordable to the poor. The latter also benefits from the "Community Dining Rooms" programme, which, as explained above, is financed through food donations from the central wholesale market and water donations from the central urban water system. Another example of systemic thinking is Nairobi's "Urban Agriculture Promotion and Regulation Act", which has been designed through strong collaboration between different municipal departments (including urban planning, trade, public health, and environment) in a conscious effort to maximise the benefits of urban agriculture in terms of food security, food safety, income and employment generation, poverty alleviation, agribusiness development, environmental conservation, sustainable agriculture, and waste management. Significantly, this act has also introduced a holistic regulatory approach to urban agriculture that has improved food production (through increased access to land, water, technology, and extension services), but also transportation and waste management.

6. Translocalism

Another important innovation introduced by city governments is the establishment of translocal networks that aim to enhance knowledge exchange and cooperation between urban areas.

There are important and well-known examples of such networks at the global level (e.g. the "Milan Urban Food Policy Pact" and the "Dakar Forum of Francophone African Cities", which has been created to help the latter with the implementation of the pact). Nationally, important translocal innovations include the "Sustainable Food Cities Network" in the UK and "City Deals" in the

Netherlands, where 12 municipalities and the national governments are cooperating (with the involvement of research institutions and the private sector) to devise a more sustainable and integrated food production approach that emphasises health and innovation goals. Significantly, food has emerged as a prominent intervention area also within networks, such as C40, which have a much broader focus.

These elements and their interactions are depicted in Figure 4.

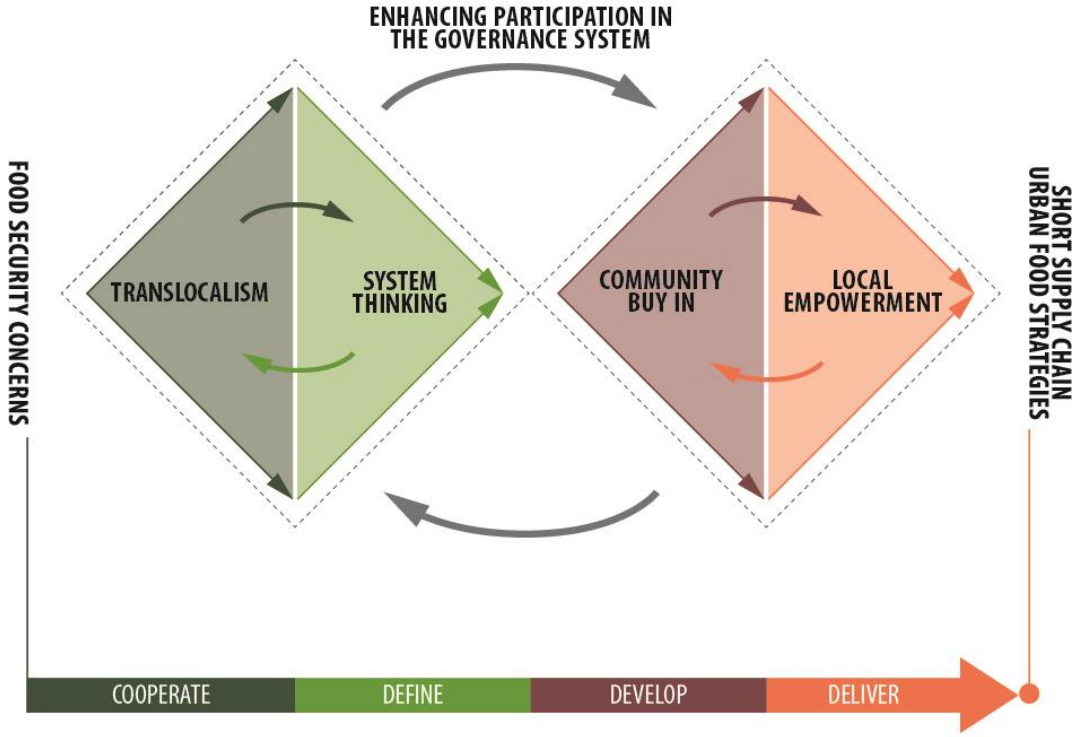

Figure 4 Innovation elements in urban food actions

All in all, by emphasising the values of participation, social inclusion, reflexivity, and collaboration, urban food strategies are challenging conventional development theories and established planning models. By harnessing and recognising their social and political ability to act, cities are beginning to relate their food systems to wider sets of public goods. In the process, new spaces of solidarity are shaping up. As described earlier, urban food narratives are informed by ideas of reconnection between food producers and consumers, between cities and their surrounding rural regions, and between the urban and the global scale, with spatially distant communities of food insecure people also included in some urban food strategies.

Clearly, there is a new and more collaborative political and cultural sensitivity developing at the city level, which is embracing and attempting to transform the politics that shape the distribution of, and access to, “good food”.

Ambitions of cities

The innovation elements presented above are not only clear from city actions and strategies, but also from their many and variegated ambitions.

As the city of Preston wrote in the survey, “food can tackle multifaceted issues”. Therefore, cities have many different future ambitions related to food.

One of the cities’ main ambitions is to “integrate polices related to food and health in an innovative perspective” (Porto), ensuring “quality food” (Ljubljana, Bucharest, Lyon, Preston, Zagreb) and “healthy food” (Gothenburg, Toronto, Edinburgh).

One of the recurrent health challenges facing many of the interviewed cities is obesity, and particularly youth obesity. Thus, in Birmingham, Preston, or Mieres, “poverty and obesity are amongst biggest concerns in the city” (Preston). For cities, “alimentary education” (Lyon), and “raising awareness among consumers” (Zagreb), but also increased accessibility to healthy food, are the solutions that would lead to “good nutritional habits” (Ljubljana).

This fight for quality food and tacking obesity involves a fight against poverty and inequalities. Edinburg and Birmingham’s food plans are examples of actions aiming at reducing the number of people living in food poverty.

The other ambition expressed by almost every city is to increase the sustainability of their food system “with lower or zero carbon footprint” in order to preserve or improve the local environment (Ljubljana). To reach such a goal, many cities have the ambition to turn to consumption of “organic food” (Toronto, Paris) and to “organic production” (Zagreb) to raise awareness of the relationship between climate change and nutrition and to “satisfy new environmental needs” (Toronto).

Waste management and recycling of organic waste through composting is one of the main actions aimed at putting the environment at the core of the local food policy.

Birmingham, Ghent, and Almere, for example, chose to place this question at the core of their food strategy by developing a food waste reduction programme or a project focused on promoting new ways of consumption.

Changes in consumption are also advocated by emphasising local and fresh food and “seasonally grown food” (Ljubljana). Cities identified many goals in this area. First, localness ensures quality agriculture, and thus quality food. Second, local food will lead to achieving self-sufficiency. Zaragoza is wishing to acquire “auto supply for fruits and vegetables”; Dakar is aiming at auto-production and auto-consumption, and therefore reaching “feeding sovereignty”. In this same line, cities as Zaragoza, Zagreb, Tirana, or Modena are willing to develop “urban gardens” and “urban agriculture” (Antananarivo), “to support the commercialisation of the near agro-ecologic products” (Zaragoza). Lyon metropolitan area encourages the development of farmers’ markets or farmer shops to support short-supply chains. The Venice Urban Gardens Network is used for distributing local products. Zagreb cooperates with associations of agricultural producers in “branding local products” and providing “credible assurances about the origin of the agricultural products”. Edinburgh aims at a thriving food economy with greater diversity in local food production. This ambition of providing local products is also a way to generate employment and improve the condition of local farmers.

Cities can also achieve their economic and social ambitions through food related activities, which can also be a tool to promote social integration and inclusion or to support employment. One of the five strategic goals of Ghent’s food strategy is to encourage the creation of more social added value for food initiatives. Modena wants to work on a programme to “try to use the food in school to foster socialisation among Italians and foreign children”. Social kitchens in Birmingham or Porto, for example, take part in the broader ambition of tackling homelessness in cities. In most cases,

the social ambition linked to food is to ensure that the right to food becomes a right for every citizen.

Lastly, the multi-governance of food projects and programmes is essential for many cities: citizen participation and involvement in the discussion is very important to develop a successful food programme, according to Mexico, Milan, Turin, or Ghent. Working with "relevant stakeholders" (Cork) and "local actors" (Zaragoza), and engaging with universities and with the private sector (Venice, Turin) is seen as key to achieving these different ambitions.

Research needs

Almost all cities have emphasised the added value of collaborating with research institutions and universities on their territory on the topic of food, particularly for the development of food projects and polices. Few cities have also expressed their willingness in the future to even increase these collaborations in order to create or scale up new solutions and better services for citizens (see section on Ambitions of cities).

Some cities have also indicated the presence of a dedicated innovation hub or research centre dedicated to food in their city: the city of 's-Hertogenbosch has a specific innovation hub focusing on agrifood[6]. Rome is the seat of the "Food Tech Accelerator", which is a global and independent accelerator program dedicated to food technology, supported by the startup boot camp "Food Tech".

Our research has identified a series of challenges that cities face when trying to implement comprehensive food strategies on their territory. Stronger collaboration with research institutions and universities in defining the research questions together with cities should help them overcome these obstacles.

The needs described below fall into one of two categories:

- Needs are a result of the inability of cities to provide data and information on a certain food-related working area. We therefore saw a lack of activity of cities in that specific area.
- Additional needs are related to the necessity to improve and scale up current solutions, to make them more widely available at local level.

The following needs and further research questions have emerged:

1. Research needed to further support city governments' efforts to **connect top-down and bottom-up food initiatives** that need to be developed to improve communication and relations between food system actors, working towards a better connected urban foodscape. Similarly, cities have also expressed the need to engage and discuss with other cities and relevant actors their successful urban food strategies.
2. Research needed to enhance the involvement and **participation of the private sector** – some cities have had very little success on this front, particularly in the business-to-business aspect.

[6] GROWCAMPUS http://growcampus.nl/, CITA-Agrifood Research and Technology Center of Aragon Region http://www.cita-aragon.es/ . CERAI-Rural studies and International Agriculture Center. http://cerai.org/

Few areas are, however, more inclined to see the participation of business, for example in food waste collection and re-use. Cities have also expressed concerns in collaborating with certain types of companies. For example, UK cities have recalled their experiences of refusing to collaborate with well-known food companies due to the quality of their food: companies had offered to provide free breakfast for children in schools, but cities had to decline due to concerns over the high sugar content of these foods. This also emerged from the composition of local food council which do not often see the participation of big food retailers.

3. There is a wealth of urban initiatives taken to combat **expanding food poverty** and inclusion. Do such initiatives have the potential to offer an alternative to charity food systems? What role could urban food governments play in developing and supporting the emerging social food economy? Is there scope for a revised food bank model that connects emerging initiatives with the provision of charity food? Can we broaden our perspective on the nature of the problem and available solutions to it through a wider and deeper policy approach that empowers the victims of food poverty? What role could urban food governments play in developing and supporting the emerging social food economy?

4. **Systemic thinking** holds a significant transformative potential, given its capacity to focus attention and to intervene throughout the food chain, rather than in production OR consumption only. What measures and mechanisms are needed to scale out and eventually scale up initiatives that are successfully connecting different food policy priorities (e.g. food security and sustainability), actors, and activities? How can systemic thinking be translated into food policy integration at the urban, but also regional and national/global, levels?

5. Research should further enable the use of **smart technologies** in relation to food, as initiatives in this field are still scattered. Few cities have reported the emergence of apps, online platforms, or social media groups campaigning against food waste. Also interesting is the use of smart technologies for better tracking of food entry and exit points (Shanghai, see below).

6. Research could also support local authorities in implementing **innovative procurement tenders**. Cities are increasingly seeking to ensure higher environmental and social standards in their procurement processes, particularly in the canteens managed by them (Figure 5).

   Some cities identified higher social and environmental standards as one of their main future ambitions. For example, Paris' "plan alimentation durable" aims at serving 50% sustainable food by 2020 in all the canteens managed by the city. This is measured by three indicators: percentage of organic labeled food; percentage of other labeled food ("Label Rouge", "Marine Stewardship Council" and "Pêche durable"), and percentage of local and seasonal food.

Other indicators for sustainability are: - 0 GMO - 0 palm oil - 0 fish of deep sea fished species - 100% of eggs from free-range chickens - 20% reduction of meat products. Innovation procurement in the sense of procurement of new technological solutions is currently dis not emerge as a practice from any of the interviewed cities. Instead, Gothenburg is going for a minimum of 50% organic food (100% organic meat) in all public canteens. Bari is aiming for 100% local food. Quito is currently reviewing the local ordinance aiming at strengthening the popular and solidarity economy. They want to include small farmers and create additional spaces for the promotion of the solidarity economy.

Figure 5 Cities with innovative procurement methods

7. **Missing data**, and in particular the absence of comparable data, seems to be one of the biggest issues cities face when they attempt to better understand their food systems and food flows. For example, only two of the participating cities (Paris and Barcelona) had some data related to the vicinity of food production (Figures 6 and 7). This was not the case in cities outside the EU, which seem to be more aware of the percentage of food consumed and produced locally (in particular Shanghai and Quito).
   Cities could also use updated data to better communicate to citizens the level of health of their city through interactive maps.
   Missing data is an issue also in terms of the creation of monitoring frameworks for the overall understanding of the food system, food flows, and the impact of local food policies. One area that needs specific attention is the development of high-level policy-oriented assessment and monitoring tools for urban food. Urban governments are increasingly voicing the need for robust frameworks of indicators that would help them measure the impact of their initiatives, identify potential gaps, and adjust priorities and intervention accordingly[7]. Data should also be made comparable and be collected at national level in order to have national or even European monitoring frameworks.

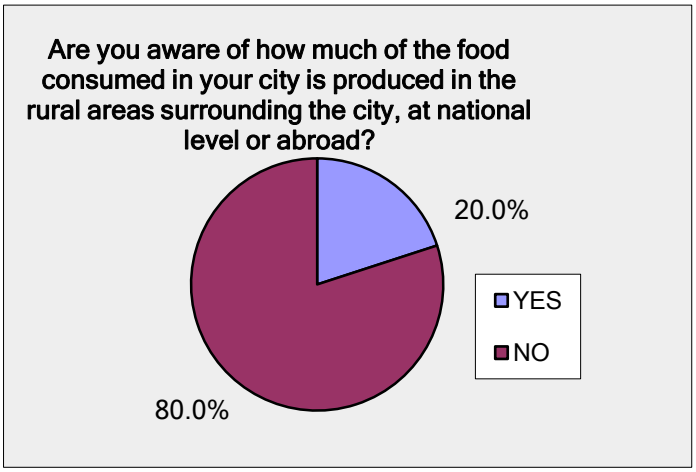

Figure 6 Level of awareness of the source of food consumed in the city

[7] See, for example: http://sustainablefoodcities.org/getstarted/developingindicators

8. Another emerging issue is the further development of **green and blue logistics** for food distribution and food waste collection. As emerged from the questionnaire, cities still do not have enough experience in this area, for example regarding the safe re-distribution of unsold food for charities.

9. Conventional **urban farming** is not always an available option for very condensed cities. Cities have expressed the need for additional research on easy and cheap systems for producing green salad plants on balconies or rooftops, or vertical farming.

   Few EU-funded projects are providing research in this direction, but the results will need to be scaled up and tested in different environmental frameworks (see the INSTAGREEN[8] project).

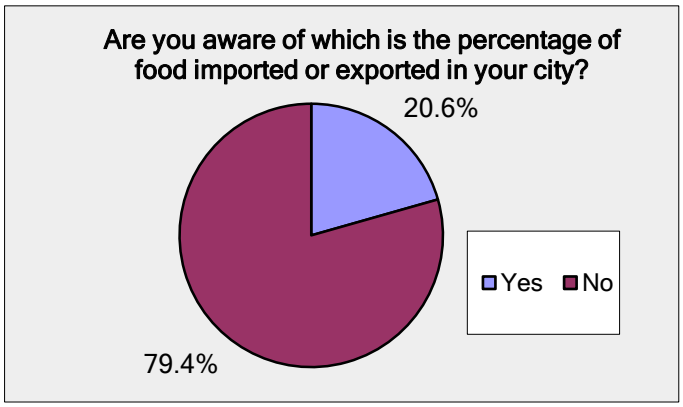

Figure 7 Awareness on the percentage of food imported or exported in the city

The type of issues described above are perfectly in line with the FOOD 2030[9] background document, which aims at supporting further open innovation by introducing more actors into the innovation process so that knowledge and ideas can circulate more freely and be transformed into products and services that create new markets.

Use of policy instruments, and main actors involved in food-related activities

This research mainly aimed at investigating which type of policy instruments and which type of collaborations are put in place by local authorities wishing to work on comprehensive food strategy or actions.

The graphs below provide an overview[10] of the overall use of policy instruments in cities outside the EU (Figure 8) and in cities in the EU (Figure 9), while in the sections below the use of policy instruments by cities is analysed according to the different areas of work related to food.

Urban food systems and policies inevitably depend on the features and circumstances of a city, including: historical and cultural factors; strength and basis of the local economy; geographical setting and natural resource; infrastructure; and societal and political factors, such as governance structures, and the strength of the state and of civil society.

However, the cities' food-related strategies, policies, and actions are still rather similar. The size of their population or their geographical conditions do not seem to have a major impact on the

[8] https://instagreen.eu/
[9] http://ec.europa.eu/research/bioeconomy/pdf/food2030_conference_background.pdf
[10] Reading of data should take into consideration that only few cities outside the EU took part in the survey (see methodology).

cities' future ambitions. But the impact is clearly more marked of their population structure, poverty rate, the presence of third-country nationals, or the obesity rate.

For example, in UK cities, the alarming increase in obesity and diabetes in schools seems to be the main driver of food policies. Similarly, in African and South American cities, poverty and the need for food production in urban areas are identified more clearly as main drivers of food-related work. The goals of other cities are rather similar.

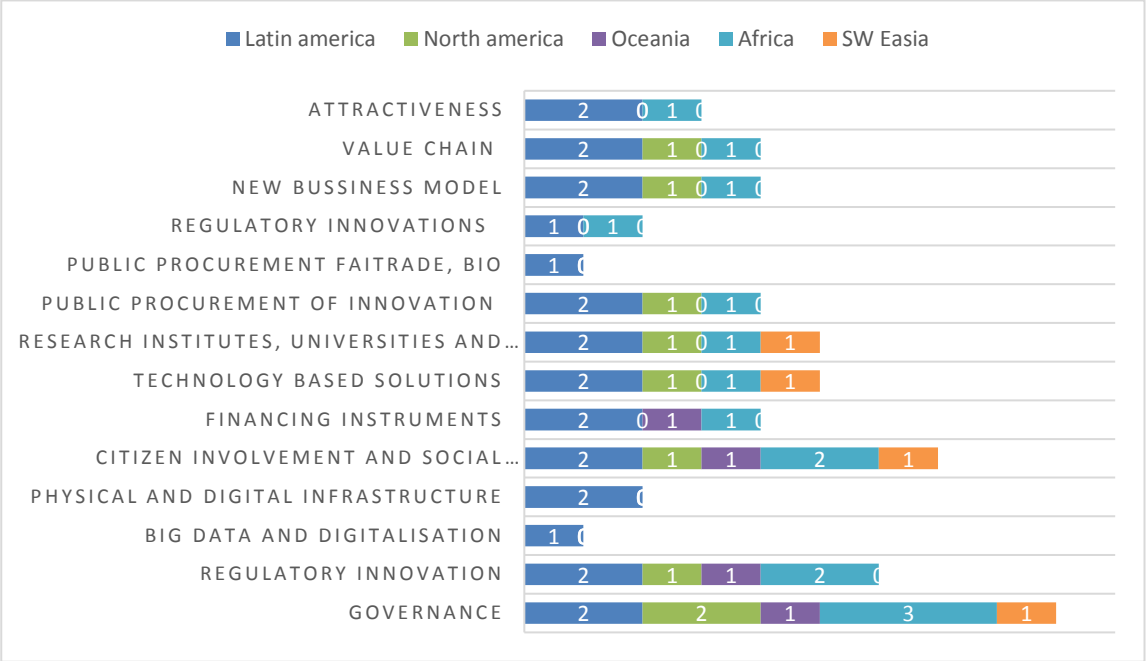

Figure 8 Overall use of policy instruments outside the EU

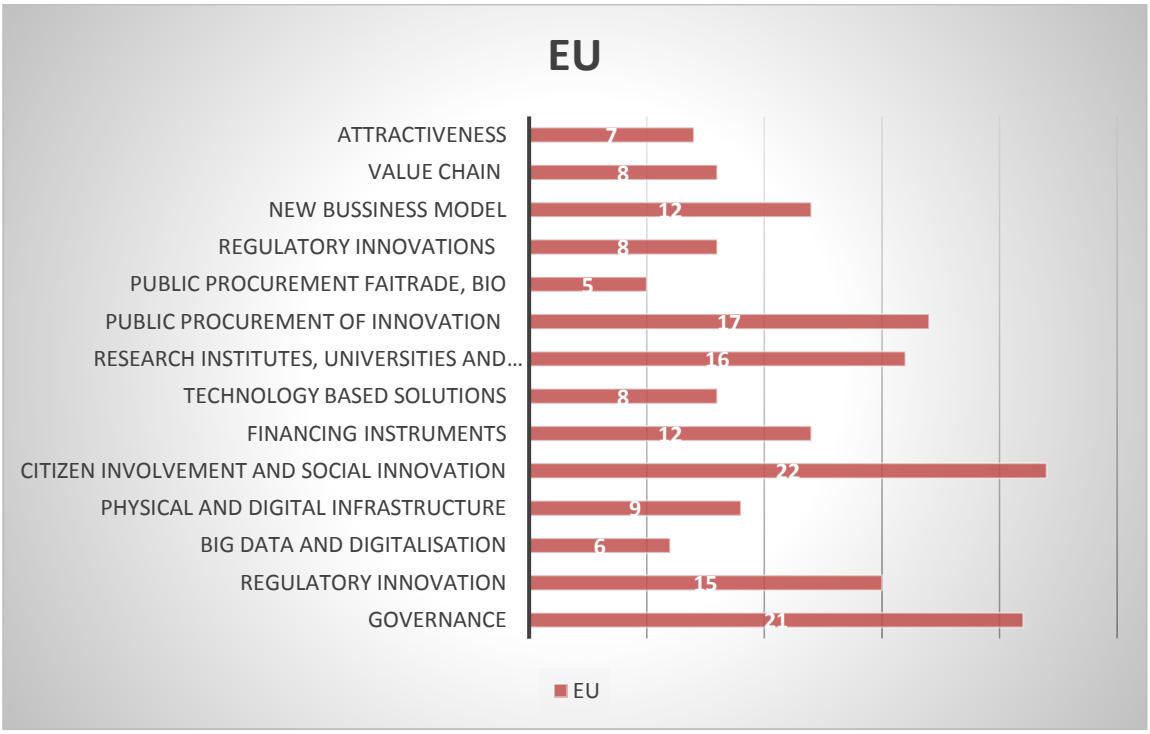

Figure 9 Overall use of policy instruments in the EU

As shown in the graphs (Figures 8 and 9), the main instruments at the city administrations' disposal to influence the food system include:

- **Citizen involvement and social innovation:** As seen above, cities are very keen to enable strong participatory processes to co-create their food strategy. The involvement of civil society is vital for them to promptly identify emerging issues and response gaps, and also to build capacity between and across government agencies, policy sectors, and governance levels. It is likewise necessary for them to support the long-term viability of urban food policies, and to ensure that these remain informed by a multi-stakeholder and inclusive approach that is truly responsive to the context-dependent needs of urban populations.
- **Governance:** Cities need to necessarily create new links across departments and levels of government if they wish to work on a comprehensive food strategy.
- **Public procurement:** Cities can use their purchasing power to influence the food system in a direction they want: e.g. more healthy food, more organic food, more vegetarian food, more local food, more culturally appropriate food, etc. Those measures might be specified and implemented via legislation, and by designing "creative tendering documents that incentivise the provision of healthy and diversified foods for the most vulnerable segments of the urban population (e.g. children in schools, patients in hospitals, elderly in care homes)".
- **Infrastructural development:** Key nodal points of the food system (e.g. wholesale markets, warehouse facilities) are often located in urban and peri-urban areas. By working to support or develop this infrastructure, cities can make a major contribution to the establishment of more sustainable spatial, socio-economic, and environmental linkages between urban and rural areas.
- **Collaboration with research:** Almost all respondents recognised the added value they find in collaborating with research institutions on their territory. There is a need for comprehensive and multi-disciplinary research that provides solid data and insights to assess and monitor the impacts of urban food initiatives. In-depth research on urban food systems is also needed to empower local actors – that is, to enhance their understanding of broad food system dynamics, enable them to measure and benchmark progress, capture best practice, and foster knowledge exchange.

It is also important to notice that, according to the different areas of activities, both the use of policy tools and the type of actors involved differ substantially.

A breakdown of policy tools and type of actors involved is added below under the six different categories used in this study:

1. Governance
2. Sustainable diets and nutrition
3. Social and economic equity
4. Food production
5. Food supply and distribution
6. Food waste

Category 1: Governance

This category covers the activities of cities in the following areas: *participation; integration of local initiatives into programmes and policies; development of urban food policies and plans; multisectoral information systems for policy development; development of disaster risk reduction strategies.*

Of the six categories identified in this study, this one has elicited the highest number of responses. Cities agreed that governance is the most essential, albeit also the most difficult, element of the successful development of a food strategy or of food-related policies and actions. According to Mieres, collaboration between city administrations is easier than that between the different levels of government. Bruges also confirmed this view: the city is still trying to integrate all its different city departments and the regional governments into their "Food Lab". Lyon Metropole identified the difficulties of stakeholder engagement as one of the main obstacles to the further development of its food strategy.

Numerous actors are involved in activities related to governance, open participation, and food strategy creation. Cities highlighted the need for strong participation by the third sector, the public sector (other city departments), and the research sector. The regional governments and the private sector also need to be actively involved, and collaboration at European and international levels is likewise important (Figure 8).

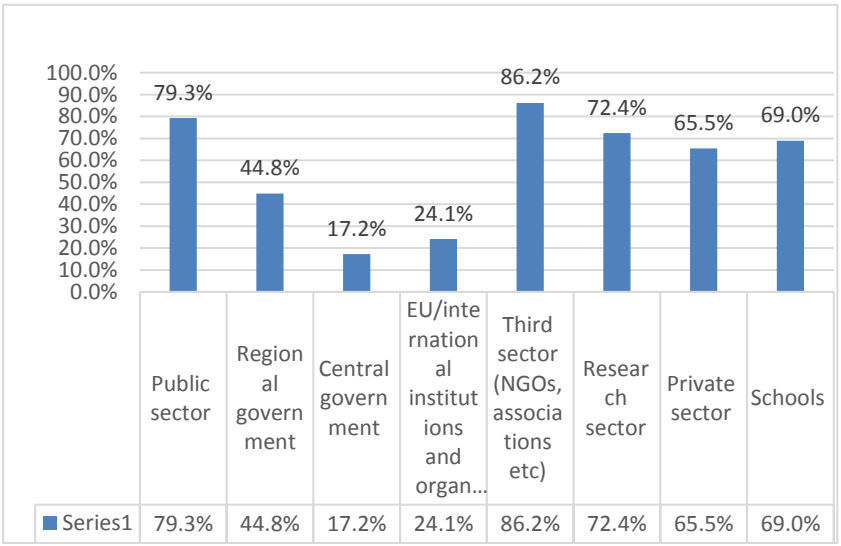

Figure 10 Types of actors involved in Category 1: Governance

In line with the findings in the section on innovation trends in cities, local authorities rely heavily on citizen engagement and on social innovation tools when drafting their food policies (Table 1).

Table 1 Policy instruments used in Category 1: Governance

Policy instruments Category 1: Governance		
Answer options	**Response percent**	**Response count**
Governance	92.9%	26
Big data and digitalisation	21.4%	6
Physical and digital infrastructure	32.1%	9
Citizen involvement and social innovation	82.1%	23
Science diplomacy	17.9%	5
Financing instruments	35.7%	10
Technology-based solutions	32.1%	9
Research institutes, universities, and innovative firms	50.0%	14
Public procurement of innovation	32.1%	9
Regulatory innovation	21.4%	6

New business models	25.0%	7
Value chains	35.7%	10
Attractiveness	32.1%	9
answered question		**28**
skipped question		**10**

Some 85% of the respondent also believe that their work is easily transferable to municipalities, and in some cases this has already been done. One respondent added that the ideas, solutions, and policies proposed by citizens can be applied to almost all the policies designed by a city.

Forty percent of the respondents to the survey could estimate the cost of their food related work in the municipality. Paris' "participatory budget" equals 5% of its total investment budget (approximately €0.5 billion) by 2020.

Mexico City relies mostly on federal budget, but it expects its surplus food production to help finance its work in the future. The first stage of the city's food-related project will need an investment of 10 million Mexican pesos (€462,000).

Barcelona estimates its food-related work to cost €5 million. The respective figure in Modena is €15,000 per 5,000 children. Parma has received at total of €150,000 from the municipality, the region and, private partners. Lyon Metropole relies on the European Agricultural Fund for Rural Development, and collaborates with foundations. The metropole has recently launched an open call for proposals addressed to businesses and associations active in the field of healthy diet.

Athens collaborates with 130 schools in its "Athens Laboratory for Food Policy" project, which organises workshops on healthy food production.

Almere and Utrecht are involved in the "City Deal" project, which brings them together with ten other cities and their national governments on issues related to healthy food, sustainable food, robust food systems, and governance. Their main aims are to better communicate the cities' needs to the national governments, to push for faster regulation, and to help other cities develop national and local food policies.

Birmingham has engaged a variety of actors - schools, businesses, restaurants - in its campaign to promote healthier meal options. The city also supports restaurants that offer healthy food.

Venice is still in the process of identifying the local actors and stakeholders it aims to involve in developing its food strategy(social farmers and social NGOs).

Utrecht collaborates with local researchers to obtain better data on its food system (food origin, food waste). This city aims to rely less on the national government and to act as enabler of bottom-up initiatives. Utrecht is also involved in the "City Deal", and is active in co-creating a national food policy called "From Agriculture to Food Policy".

Several cities have reported difficulties in the creation of their food policies and in enhancing collaboration with stakeholders (time and effort). However, IT tools can help the involvement of stakeholders, particularly of citizens.

Cities also agreed that the development of a food strategy often required: a preliminary analysis of the status quo in the city; the creation of a shared vision and the identification of priority actions shared by the politicians and local actors; and the definition of concrete actions.

Other shared challenges identified by cities included:

- accessing funding (regional, national, EU)

- offering public spaces for markets, events
- appointing a high-profile 'champion' to take the city's agenda forward
- creating a food commission – a body of public and private actors to develop innovative projects for economic development and advise on public food policies.

Category 2: Sustainable diets and nutrition

This category covers the following activities: *promoting sustainable diets; tackling non-communicable diseases; developing sustainable dietary guidelines; making sustainable diets and safe drinking water accessible; and encouraging joint actions by the health and food sectors*.

In this category, local authorities play a strong role in public canteens, where they have exclusive competence to work on healthy and sustainable diets.

Some cities added that the development of sustainable and healthy diets in public canteens is the first area of action for cities interested in developing food projects and policies.

Almost 90% of the respondents referred to strategies or guidelines as keys to promoting healthy food in school canteens, along with programmes for creating awareness among children on the added value of fruit and vegetable consumption. Many cities have a health or social department leading on this type of work. Considering the type of actions involved, the most important collaborators for cities are schools and the third sector (Figure 11).

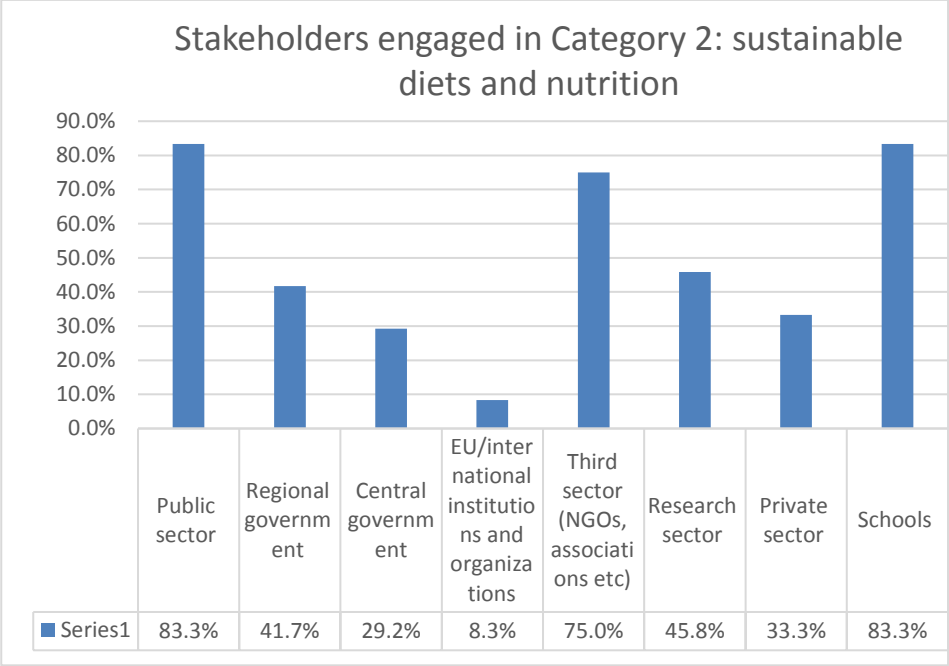

Figure 11 Types of actors involved in Category 2: sustainable diets and nutrition

Ninety-two percent of the respondents believe that their actions are easily replicable in other cities. In this area of work, respondents had more available data on the type and quantity of budget used for their actions. The budget size is different: from €6,000 (Mieres) to €50,000 (Frankfurt) and USD900,000 per year for Quito.

Cities mostly use governance (regulations) and citizen involvement to raise awareness of healthy foods. Surprisingly, public procurement is not among the main tools identified by cities, even if it

is often through procurement guidelines (promoting healthier, local, or fair trade food) that cities can steer the quality of the food in a certain direction (Table 2).

Policy instruments In Category 2: sustainable diets and nutrition		
Answer options	**Response percent**	**Response count**
Governance	66.7%	16
Big data and digitalisation	12.5%	3
Physical and digital infrastructure	20.8%	5
Citizen involvement and social innovation	62.5%	15
Science diplomacy	8.3%	2
Financing instruments	20.8%	5
Technology-based solutions	8.3%	2
Research institutes, universities and innovative firms	37.5%	9
Public procurement of innovation	20.8%	5
Regulatory innovation	25.0%	6
New business models	20.8%	5
Value chains	12.5%	3
Attractiveness	33.3%	8
answered question		**24**
skipped question		**14**

Table 2: Policy instruments used in Category 2: Sustainable diets and nutrition

The activities of cities in this area include:

Belo Horizonte's Secretariat for Food and Nutrition Security (SMASAN) has created a state-led alternative food system that aims to ensure that everyone has access to decent, nutritious, and safe food. It was created by the former mayor, and civil society and the private sector serve as programme partners and have roles in governance. SMASAN's influence has declined with political leadership changes, but civil servants defend its core principles, and the policy benefits from supportive federal framing.

In Shanghai, concerns over food security have been the main drivers of food -related actions. The city has set up the Shanghai Food Safety Information Tracing Management Regulation Programme (FSITMRP) to manage the massive amount of food circulation information and to enhance food safety for its 23.8 million permanent residents.

In Ghent, the City Health Council works closely with the Ghent Health Promotion Network and the city health administration to coordinate strategies and launch community-based campaigns. In addition to schools, campaigns also often focus on the parts of the population usually excluded from co-creation policies (minorities, refugees, unemployed people).

Collaboration with schools for promotion of healthy and quality food among pupils has been identified as one of the key work actions by many respondents. Through procurement processes, Milan and Birmingham collaborate with public or semi-public companies in charge of providing nutritious and healthy food in public canteens, and they also promote educational activities on sustainability and food quality. In Milan, the company is also in charge of recovering and redistributing food that would otherwise be wasted.

Category 3: Social and economic equity

This category includes the following actions: *using cash and food transfer; promoting decent employment in the food and agriculture sectors; encouraging social and solidarity economy activities; promoting networks and supporting social inclusion through food; and promoting education, training, and research.*

Social and economic equity, as well as food production, supply, and distribution, were identified in a few responses only, indicating either a the lack of information or of actions by cities in this area.

This area sees a strong collaboration with the public sector and the third sector, but also the private sector as shown in Figure 12. Schools are, once again, engaged in promoting social equity type of actions.

The city departments leading on this work are different in many of the respondent cities: it is mainly the social or health department, but also the local economic development agency, education/school department, and in few cases the agriculture or environment department.

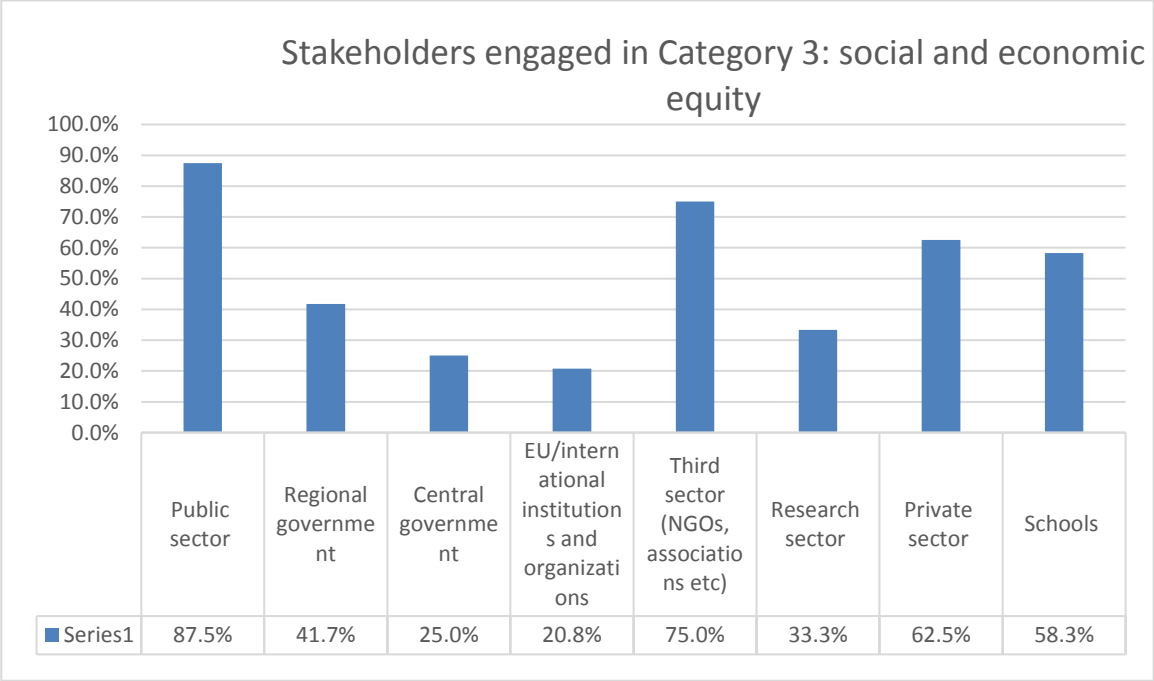

Figure 12 Type of actors involved in Category 3: social and economic equity

The types of policy instruments used in this category do not differ substantially from those identified in the previous categories, where citizen involvement and social innovation are the most used tools, proving once again that innovating cities are seeking to develop their food systems. Governance is less used in this area (Table 3).

Table 3 Policy instruments used in Category 3: Social and economic equity

Policy instruments in Category 3: social and economic equity		
Answer options	**Response percent**	**Response count**
Governance	65.2%	15
Big data and digitalisation	8.7%	2
Physical and digital infrastructure	34.8%	8
Citizen involvement and social innovation	73.9%	17
Science diplomacy	4.3%	1
Financing instruments	21.7%	5
Technology-based solutions	17.4%	4
Research institutes, universities and innovative firms	30.4%	7
Regulatory innovation	30.4%	7
New business models	30.4%	7
Value chains	30.4%	7
answered question		**23**
skipped question		**15**

A total of 91.67% of the respondents mentioned that their work is replicable in other contexts. Quito said that it has already encouraged other municipalities to promote the AGRUPAR (Participatory Urban Agriculture)[11] project, as it believes that urban agriculture has the versatility to adapt to various social, economic and ecological contexts.

Only 13 respondents had information on the cost their work in this area entails. Costs differ substantially: from 208,645,155 Mexican pesos (€9,639,406.16) in Mexico City to €117,000 in Barcelona, €40,000 in Parma, and €21,000 in Mieres.

The actions put in place by cities in this area include the following:

An example of Toronto's ambitious work on food is the "Food Starter" inititive. In 2007, Toronto assisted in forming a not-for-profit organisation called the Toronto Food Business Incubator (TFBI) with the primary purpose of providing startup micro food enterprises with commercial-grade kitchen space and programming to help them grow their businesses.

Birmingham is considering providing holiday kitchens able to feed 10,000 families and their children during the school holidays. The aim is to make sure that children receive at least one good meal per day[12].

Gothenburg, Berlin, and Brussels are spreading the concept of the 'social fridge', where anyone can leave food/leftovers to be picked up by someone in need. Recently, Berlin had to interrupt this practice due to concerns over the quality and food safety. To overcome these obstacles, Gothenburg is putting these fridges in "sharing economy shops", where the content of the fridges is checked regularly.

Many cities have programmes to include the usually excluded parts of the population in the job market by promoting cooking in schools, targeting migrants, the long-term unemployed, people with disabilities, or ex-prisoners. Edinburgh is supporting the "Social Bite" project, a social enterprise in Edinburgh and Glasgow, which employs and trains long-term unemployed and

[11] http://www.conquito.org.ec/
[12] https://www.theguardian.com/society/2017/apr/24/school-holidays-leave-3-million-children-at-risk-of-hunger-report-says

homeless people, and provides free meals to those in need. Similar projects targeting migrants exist in Athens, Venice, and Milan.

These organisations also often re-use unsold food, particularly vegetables, promoting therefore the reduction of food waste (Lyon is an example).

The promotion of food production in disadvantaged area of the city is also used as a social inclusion tool by many cities. These activities give low-income families access to food, and at the same time promote the consumption of sustainable, organic, and local food.

Porto has created a network of public restaurants, where social workers and nutrition experts collaborate to serve balanced food to people in need, with the leftovers collected by company canteens or private restaurants.

Collective kitchens have originated in Greece as a response to the economic and social crisis that started in 2010. They reflect informal actions by civil society, aiming at the satisfaction of fellow citizens' need for food. Soup kitchens are organised daily in Athens (serving several thousand) by the municipality (KYADA) and NGOs (e.g. Equal Society), as well as by ad hoc initiatives of concerned citizens in several neighbourhoods of Athens.

Venice is searching for solutions to overcome the stigmatisation that is often associated with the use food banks, particularly for people who only recently found themselves in a situation of poverty. The solution could lie in the creation of environments able to disseminate free/low cost/recycled food, but that are not necessarily only targeting those in need.

Category 4: Food production

This category includes the following actions: *promoting urban and peri-urban food production; promoting urban-rural linkage; using an integrated approach in urban planning and management; protecting and enabling access to land; supporting food producers and short food chains; and improving waste water management*.

Only a few cities have mentioned pilot projects or initiatives aimed at promoting food production in their city, and even fewer mentioned a strategy that also strives to increase food production. This is probably due to the limited availability of space in some cities for food production; to health-related issues (quality of available water and soil); or simply to the limited possibility to work in this area, which is usually the competence of the regional authority.

Cities said that one of their policy aims is to increase urban food production, but there are only a few examples of urban farms. Rome, Modena, Bilbao, Vitoria Gasteiz, Utrecht, Ghent, Venice, and Gothenburg mentioned the presence of projects dedicated to local organic farms and community gardens. These are mainly used for increasing citizens' awareness on healthy food (for example for youngsters or children) or for social inclusion purposes, but they still do not have the potential to have a strong impact on urban food consumption.

Melbourne has drafted dedicated policy guidelines for further enhancing community gardens[13], seen as a unique way to promote public health and wellbeing and improve local food security.

[13] http://www.melbourne.vic.gov.au/residents/home-neighbourhood/gardens-and-green-spaces/Pages/community-garden-policy-and-guide.aspx

Antanarivo[14], Mexico City[15], Toronto[16], Ljubljana[17], and Lyon[18] have mentioned their dedicated strategies aiming at improving and increasing urban food production, mainly at metropolitan or regional level. Among the respondents, Mollet del Valles is a unique case as almost 50% of its territory is rural/agricultural land. The city said that most of its current work and future ambitions stem from the AGRI-URBAN URBACT project.

Compared to the previously mentioned areas of work, in this category there is a stronger presence of the research and private sectors. As in other areas, collaboration with the third sector is likewise strong. Compared to other areas, collaboration with the regional government is also more marked, as food production is often the competence of the regional level of government rather than of the city itself (Figure 13).

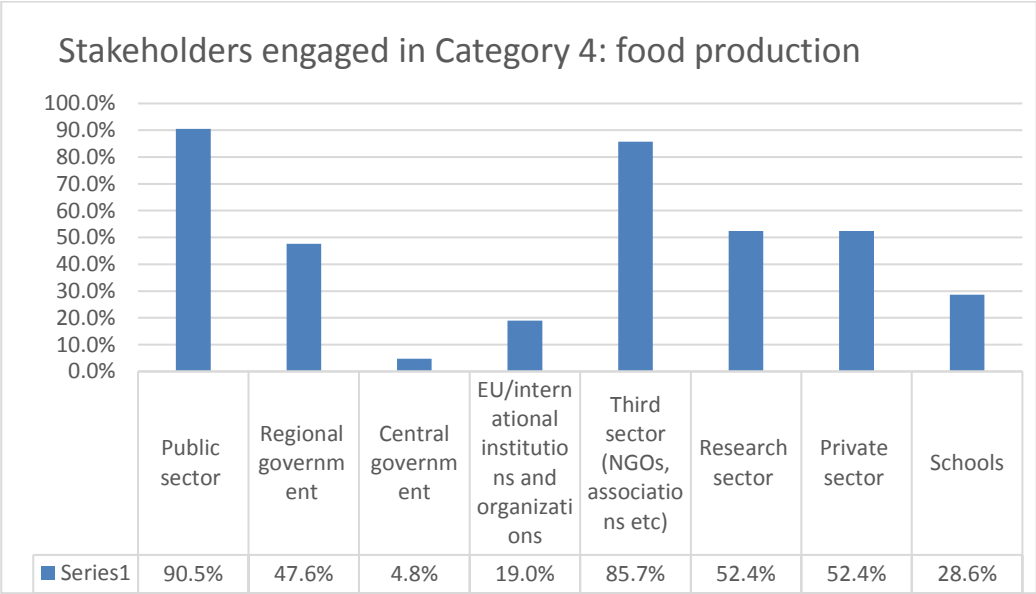

Figure 13 Types of actors involved in Category 4: food production

The city departments leading on this work are mostly those responsible for employment and sustainable economic development, or agriculture and the environment.

In Paris, a major role has been played by the public company "Eau de Paris", which is in charge of water supply and distribution. Since 2010, the public company has acquired 153 hectares of agricultural land (including 13.9 ha in 2014) to preserve water quality and the environment. This made 264 ha of land available to farmers in 2014, including 183 ha already converted to organic farming (73%). Under this plan (2009-2014), the city managed to increase the share of sustainable food (organic, labelled, seasonal, local) in municipal canteens to 27.3% by 2014. The project required the collaboration of the city of Paris, the local public authorities from the surrounding areas, NGOs, and urban farmers.

In this category, governance seems to be most used tool. Differently from other areas of work, food production see the use of additional policy tools like new business models, value chains and financing instruments, together with cities' involvement, as seen in table 4.

[14] Programme d'Appui à l'Agro-Sylviculture autour d'Antananarivo
[15] Small-Scale Sustainable Agriculture Programme for Mexico City
[16] Toronto Agricultural Programme, Toronto Urban Growers (TUG)
[17] Strategy for Rural Development of the Municipality of Ljubljana in the 2014-2020 Programming Period
[18] PSADER PENAP / Metropolitan Agriculture Policy Lyon

Cities said that their strategy in this category is easily replicable in other cities, even if adverse conditions - quality of water and soil, or limited available space - might hamper their efforts. For example, Turin is currently investigating, together with the local university, whether the city's environmental conditions make it worth for it to invest in and promote urban food production.

Information on the costs associated with actions in this category are scarce. In Quito, the cost of running the AGRUPAR strategy is USD360,000 (around €330,000), and the main source of financing is the municipal budget.

Table 4 Policy instruments used in Category 4: food production

Policy instruments in Category 4: food production		
Answer options	**Response percent**	**Response count**
Governance	72.7%	16
Big data and digitalisation	9.1%	2
Physical and digital infrastructure	31.8%	7
Citizen involvement and social innovation	59.1%	13
Science diplomacy	9.1%	2
Financing instruments	59.1%	13
Technology-based solutions	31.8%	7
Research institutes, universities and innovative firms	31.8%	7
Public procurement of innovation	40.9%	9
Regulatory innovation	13.6%	3
New business models	40.9%	9
Value chains	40.9%	9
Attractiveness	31.8%	7
answered question		**22**
skipped question		**16**

Below are some examples of municipal activities aimed at enhancing local food production.

In Ghent, the main purpose of the 'de Site[19]' project is to create the conditions for a pleasant, safe, and sustainable community. 'De Site' is a meeting place for all inhabitants of all ages and nationalities, where different activities are being organised, among which food production activities. The city has also provided the land for the "Community Food Garden", where food is produced and cooked, alongside other social integration activities. The city encourages farmers to speak with each other and persuades them of the added value of a short supply chain and local food markets, rather than selling their products to big retailers.

Also interesting are the cases of Barcelona, Lisbon and, Ljubljana, where nature-based solutions are being used: these cities promote green corridors, street trees, and urban gardens[20]in order to improve the environmental standards and to promote climate adaptation solutions, for example against urban heat.

Almere and Birmingham also seek to improve their collaboration with supermarkets to increase their selling share of local products and to promote shorter supply chains. Birmingham uses a school to train chefs in using local and seasonal products.

[19] http://www.rabotsite.be/en
[20] http://oppla.eu/nbs/case-studies

Edinburgh relies heavily on procurement. Through its 'Edinburgh Food for Life' partnership, the city has increased the level of consumption of local and organic food in schools, care homes, and university hospitals.

Gothenburg and Lyon have different financial programmes in place, which aim at supporting or scaling up urban and peri-urban food production, and at shortening the food supply chain through farmers' markets or informal groups of direct purchasers, which promote direct producer-to-consumer interaction. Lyon has underlined its intention to harness agroecology in its metropolitan area.

Sandwell, in turn, supports citizens who wish to grow their local food by providing suggestions and in some cases also land. The city has recognised a growing awareness and demand from citizens.

Porto also uses public procurement to promote the consumption of locally produced food, and supports the "ugly fruit initiative", a social business which promotes the consumption and distribution of fruits and vegetables that would normally not match the standard selling criteria for supermarkets. These are directly distributed to citizens and schools, thereby preventing food waste and increasing awareness on local consumption possibilities.

Category 5: Food supply and distribution

This category entails the action of cities in the areas of: *mapping the food flow; supporting improved food storage, processing, and logistics; reviewing food procurement and trade policies; providing policy and programme support for municipal public markets; and improving and expanding support for infrastructures*.

This is the area where we collected the lowest number of responses from cities (only 15), which we interpret as a sign of missing activities.

Food supply and distribution is also the category that sees the highest participation of the private sector - at the same level as the public sector. Surprisingly, no city mentioned collaboration with the national government, which is normally responsible for infrastructure development. Collaboration with regional governments also appears to be rare (Figure 14).

The departments in charge of such actions in cities are usually the ones responsible for economic development, trade, or business regulation.

The case of Barcelona is unique. That city has a dedicated "institute of markets". Set up in 1991, this institute[21] is an autonomous body responsible for the direct running and administration of the municipal markets. However, the relevant regulations are approved by Barcelona City Council. The institute's work is focused on three areas: improving market infrastructures and services; modernising their product range; and introducing commercial promotion policies. Barcelona's activities in this area involve the public and the private sector, with collaboration between the Barcelona City Council-Barcelona Institute of Markets, the association of traders of each market, neighbours and social associations/NGOs, and private companies.

Ljubljana uses a publicly owned company (100% owned by the City Municipality) for the organisation of its markets[22]. The activities of the JP LPT d.o.o. company include the hiring of marketplaces, their management or maintenance, and cleaning.

[21] http://ajuntament.barcelona.cat/mercats/en
[22] http://www.lpt.si/en/

Lyon supports a variety of innovative distribution systems with a view to promoting sustainable diets and social inclusion. These innovative distribution systems bring together a variety of actors: entrepreneurs, owners and managers, local producers and organic wholesalers, local authorities (the city and metropolis of Lyon) and national funding, civil society (NGOs and crowdfunding), and banks.
Some 83% of the respondents said that their activities are easily transferable to other cities, although Paris underlined the potential obstacles posed by the transport network.

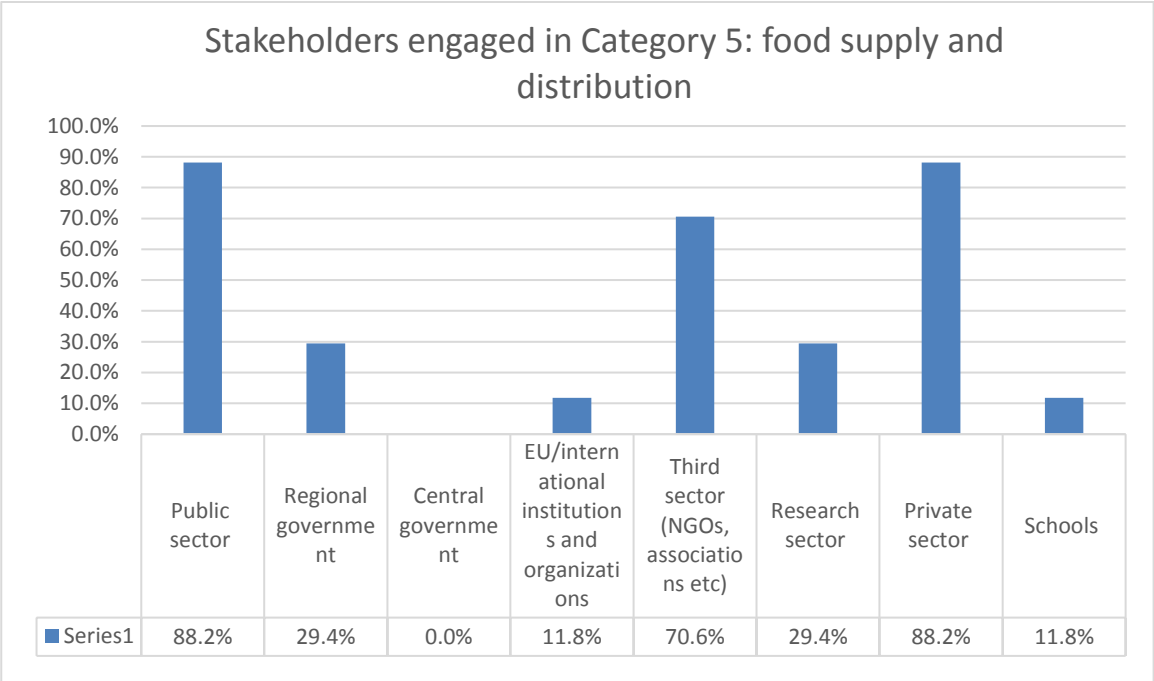

Figure 14 Types of actors involved in Category 5: food supply and distribution

Only two cities specified the costs of their actions in this area. In Quito, USD 25,000 per year (around €23,000) is spent on the maintenance of the existing infrastructure for food distribution. In Rome, the respective figure is €8,000,000. Half of the respondents are not aware of the relevant costs in their city.

Policy instruments used in this category include regulatory innovation, new business models, and value chains. Citizen involvement is also high (Table 5).

Table 5 Policy instruments used in Category 5: food supply and distribution

Policy instruments in Category 5: food supply and distribution		
Answer options	**Response percent**	**Response count**
Governance	68.8%	11
Big data and digitalisation	6.3%	1
Physical and digital infrastructure	37.5%	6
Citizen involvement and social innovation	56.3%	9
Science diplomacy	6.3%	1
Financing instruments	25.0%	4
Technology-based solutions	18.8%	3
Research institutes, universities and innovative firms	18.8%	3

Public procurement of innovation	18.8%	3
Regulatory innovation	50.0%	8
New business models	43.8%	7
Value chains	56.3%	9
Attractiveness	37.5%	6
answered question		**16**
skipped question		**22**

Utrecht mentioned that local governments are rarely involved in food supply and distribution, but the city is looking for opportunities to stimulate the use of healthy and sustainable products in school meals; food distribution to the elderly; food for the poor; and home delivery of meals and groceries.

Paris and the public company SOGARIS have created the multimodal logistics centre of Chapelle International (42,000 m^2). The centre encourages the mass delivery of goods into the heart of Paris by train. Clean vehicles are then used to distribute the goods in local neighbourhoods. The result is a decrease in environmental impacts, such as noise, pollutants, and emissions of greenhouse gases. Further investment is sought for the city's waterways to reduce the environmental impact of the transport system there.

Venice would like to further invest in developing a bicycle system to deliver products in town, ideally from the social farms, just as it is being done in other cities. Citizen platforms and social media are also promoting direct connections between producers and consumers, but the city is not involved in these.

Turin mentioned that their work on food[23] had started thanks to the city's involvement in the URBACT project URBACT Markets[24], led by Barcelona. The redevelopment of local markets at local level has the potential of improving the local economy, creating jobs, and making food supply chains shorter and more sustainable. The project focused on sharing best practices for creating and managing both street and covered markets, food or specialist markets, and further developing action plans for partner cities, such as Turin.

Both Zaragoza and Modena mentioned their ambition to promote food at "km 0". In 2013, Modena introduced a regulation making mandatory the creation of a market for local products in each of the city's neighbourhoods. The initiative was justified by multiple reasons: local markets make it easier for people with reduced mobility to access food; promote fair economy and local production; increase the educational aspect of food; reduce packaging waste; and increase the links between the rural communities[25].

Through its Smart Food City programme, Tel Aviv municipality promotes year-round access to fresh food (fruit, vegetables, juices, hummus, falafel). Through its business regulation and licensing department, the city helps shops, stands, and kiosks with an extended space or shopfront to display and sell their products along the main pedestrian streets within walking distance from one another. In 2015, Tel Aviv-Yafo municipality introduced a Municipal Green Label for businesses in the food sector targeting restaurants, bars, and cafes. In the framework of this initiative, the municipality encourages businesses in the food sector to adopt an environmentally friendly code of conduct that pertains to six themes: energy; water; sustainable procurement; supplies management and waste; community involvement; and green marketing. Similarly, Lyon has set up

[23] http://urbact.eu/sites/default/files/torino_lap_eng_24122014.pdf
[24] http://urbact.eu/urbact-markets
[25] http://www.comune.modena.it/salastampa/archivio-comunicati-stampa/2013/7/mercati-agricoli-a-km-zero-2013-il-dibattito-in-consiglio

the "Lyon Fair and Sustainable City Label"[26], also a result of the city's involvement in another URBACT project ('Sustainable Food in Urban Communities).

Toronto supports the Food Reach[27] initiative. Food Reach is a community-led collaboration framework that gives non-profit agencies, student nutrition programmes, and social services online access to nutritious food at competitive prices. The system also aims at increasing food quality awareness.

Category 6: Food waste

This category covers the following activities: *raising awareness of food loss and waste; saving food by facilitating the recovery and redistribution for human consumption of safe and nutritious foods; and improving food waste management*.

Contrary to the other areas, the presence of the private sector is stronger in this category. Collaboration is also more common with schools aiming at reducing food waste in canteens and promoting various awareness programmes (Figure 15).

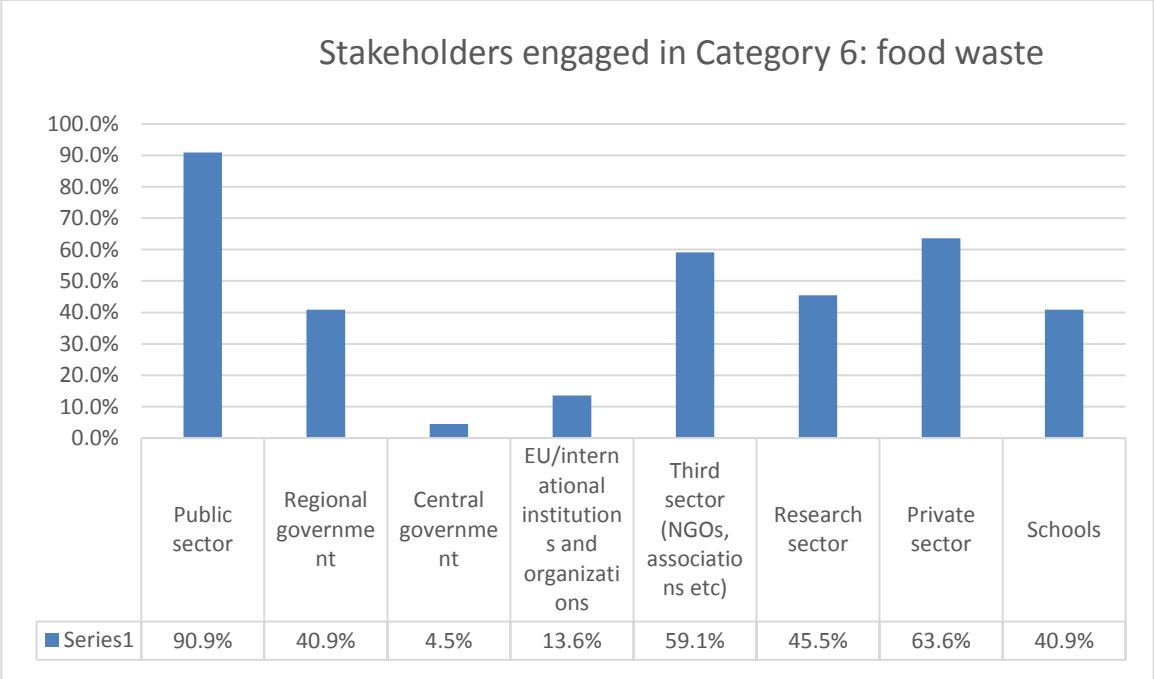

Figure 15 Types of actors involved in Category 6: food waste

In cities, the department in charge of actions in this area is usually the environment department, with the exception for those cities (like Shanghai and Toronto) where all the food-related activities are the competence of a dedicated department. In Genoa, all the food awareness activities are managed by the school and youth policies department.

Barcelona mentioned its strong collaboration with the Catalan[28] region and with the national government through the REFRESH[29] platform. The REFRESH pilot working platform, financed

[26] http://www.sustainable-everyday-project.net/urbact-sustainable-food/tag/lyon-fair-and-sustainable-city/
[27] http://foodreach.ca/
[28] http://cor.europa.eu/en/events/Documents/NAT/Food%20waste%20prevention%20in%20Catalonia.pdf
[29] http://eu-refresh.org/national-platforms/spain

through the H2020 funding programme, brings together a great variety of organisations, ranging from primary producer and consumer associations to public administrations. These stakeholders are interested in tackling food waste at national level, share their visions about the problem, and exchange potential solutions, as well as develop a framework action for reducing food waste in Spain.

Many cities have publicly owned companies in charge of food waste collection and management, and the national level also plays a strong role. For example, in Riga, the major stakeholder of the company Getliņi EKO (an environmentally friendly, high technology ecological waste management company) is Riga municipality, represented by the vice mayor. Planning and managing financial investments are supervised by Riga City Council. Implementation involves close cooperation with engineers and agricultural experts; considering case studies of other landfill practices; financial investment planning; creating step-by-step implementation plans; and testing.

In Ljubljana, the publicly owned company SNAGA[30] is responsible for food waste separation, collection, and disposal, but also for managing food waste awareness campaigns, like the 'Raise your voice against food waste'[31]. Visitors to various city events receive a food container, which enable them to take what they cannot eat at a restaurant with them.

Table 6 provides an overview of the policy instruments used by cities when working on food waste.

Citizen involvement and governance remain the preferred tools, along with collaboration with research (food waste re-use) and digital infrastructure managers.

Table 6 Policy instruments used in Category 6: food waste

Policy instruments in Category 6: food waste		
Answer options	**Response percent**	**Response count**
Governance	85.7%	18
Big data and digitalisation	19.0%	4
Physical and digital infrastructure	47.6%	10
Citizen involvement and social innovation	66.7%	14
Science diplomacy	9.5%	2
Financing instruments	23.8%	5
Technology-based solutions	42.9%	9
Research institutes, universities and innovative firms	47.6%	10
Public procurement of innovation	57.1%	12
Regulatory innovation	42.9%	9
New business models	42.9%	9
Value chains	38.1%	8
Attractiveness	33.3%	7
answered question		**21**
skipped question		**17**

The two biggest actions are related to either campaigns for preventing food waste or enhancing the added value of food waste. Remarkable is the presence of many voluntary actions by citizens and organisations to prevent and reduce food waste. Cities do not often play a leading role here, as they usually support or endorse these initiatives only.

[30] http://www.snaga.si/en
[31] https://www.youtube.com/watch?v=V2p2AwcBTnQ;%20Tedx:%20https://www.youtube.com/watch?v=w0uS9U9WHSo

An example Milan's "Myfoody[32]" initiative, which encourages food retailers to share with their customers products that are sold at a lower price (30-50%) because they are near their due date, have an aesthetic fault, or are in overstock. A similar initiative is Bari's "avanzi popolo"[33]. FLAVR.be[34], in Flanders, encourages people to prepare and share meals with their neighbours.

Collaboration with schools and public canteens is fundamental for many cities. Milan and Modena offer "food bags" to children to encourage them to bring home leftover food (bread and fruit). Ghent has a similar system in restaurants: the "Resto Restje" doggy bag scheme has some 100 participating restaurants.

Mexico City has introduced a law on "altruistic food donation of Mexico City and urban food garden"[35]. Its objective is to promote, guide, and regulate donations of food fit for human consumption and to avoid unjustified food waste. This law also sanctions those who waste or destroy food which is still fit for human consumption.

Utrecht underlined that before acting on food waste, it is important to obtain data on the actual food waste flows in a city. The RUAF Foundation collaborates with different Dutch municipalities in gathering such data. Data from supermarkets chains and food retailers are easier to collect, but are not always publicly available, while there are almost no data available from the local food markets.

Turin would like to change the pricing scheme of its urban waste collection system, and ask its citizens to "pay as you waste". However, this would require the renegotiation of the current procurement contract, which promises to be difficult. The city also uses its food recovery programme to provide employment, training, and empowerment to unemployed people and asylum seekers.

Through a competition, Almere has recently encouraged companies and knowledge institutes to come up with "new ideas" on food waste reduction.

Once food is not fit anymore for human consumption, cities are considering possibilities to add value to it: for example, Shanghai has a municipal waste oil treatment scheme; Gothenburg and Athens use biogas to run parts of their local transport systems; and Zaragoza collects biowaste to produce compost and fertilisers.

[32] https://myfoody.it/
[33] http://www.avanzipopolo.it
[34] https://flavr.be/
[35] http://www.jornada.unam.mx/ultimas/2017/02/16/expide-mancera-leyes-de-donacion-altruista-de-alimentos

Conclusions

So far, the mainstream approach has been to treat food and all its aspects separately (health and nutrition, production and consumption, governance, social and economic equity, supply and distribution, waste). Consequently, cities, particularly in Europe, have only recently started to work on food.

Only few cities in Europe and the world have developed food strategies that are comprehensive and have a dedicated person or city department able to work across sectors and to coordinate all possible areas of work related to food.

However, is it already possible to see innovation at work in cities. Many of them already see a strong role for innovation in the development of their food systems, which they aim to make inclusive, resilient, safe, and diverse. These dynamics - the use of policy tools and the types of activities cities implement - are common across cities both in Europe and beyond, and are not influenced markedly by their respective framework conditions.

Urban food narratives are led by ideas of reconnection between food producers and consumers, between different local actors, between cities and their surrounding rural regions, and between the urban and the global scale. The role that cities see for themselves is that of encouraging the spread of different activities at local level, to provide a way for different actors to connect and interact with each other, or to scale up activities. Local governance institutions want to bring together civil society, business, and research organisations in a creative space, where innovative solutions are designed and implemented.

Taking into consideration the variety of actions that cities and other actors active at urban level could possibly embrace in relation to food, there is a large scope to further enhance the role of research in supporting local authorities, businesses, and citizens' organisations in developing food solutions, actions, and strategies.

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FOOD 2030 conference background document http://ec.europa.eu/research/conferences/2016/food2030/pdf/food2030_conference_background.pdf#view=fit&pagemode=none

FOOD LINKS project: Urban Food Strategies. The Rough Guide to Sustainable Food Systemshttp://www.foodlinkscommunity.net/fileadmin/documents_organicresearch/foodlinks/publications/Urban_food_strategies.pdf

Milan Urban Food Policy Pact. Selected Good Practices from Cities http://www.milanurbanfoodpolicypact.org/good-practices/

Annexes

Annex 1: Methodology and definitions

This document is the result of work, which was done in the framework of the study "Food in cities: study on innovation for a sustainable and healthy production, delivery and consumption of food in cities", commissioned by DG research and innovation in the framework of the contract 30-CE-0833121/00-49.

It is the results of the following operational steps, performed between December 2016 and March 2017:

1. Analysis of current studies on urban food strategies: this preliminary analysis provided a further understanding of the latest cities activities around food which structured the survey development and the agenda of the focus group meeting.
   Information were collected from the following sources:

   - The MUFPP best practice book
   - The MUFPP award applications submitted by signatory cities
   - The information submitted by cities in the effort of developing the MUFFPP monitoring framework, which is under development
   - Information provided by cities from the C40 group, also signatory of the MUFPP
   - Information acquired form cities that were involved in the Food smart city for development project, led by Milan
   - Academic literature

2. Exploring current food strategies. This phase was the development of the survey (see annex 3) which was used to collect information from cities signatory of the MUFPP.
3. Dissemination of the questionnaire, collection and analysis. The survey has been disseminated through the communication channels of the MUFPP and EUROCITIES (see annex 2). Additional efforts were made to collect information from targeted cities (cities with an innovative food strategies), small-medium sized cities and cities form centre-east of Europe. The survey was also disseminated to cities of interest for the European Commission as defined during the kick off meeting.
4. Focus group meetings and creation of draft mapping report. A focus group meeting was organised in Birmingham on 9 February. The event provided additional resources, which confirmed the findings provided by the results of the survey and provided additional qualitative information on the activities of cities.
5. Innovative urban food strategy - the study. All the collected elements were analysed and after presentation to the European Commission, this study was developed.

Biased of the research

As the survey is mainly based on cities signatory of the MUFPP it is focusing on cities that have already acknowledge their role as actors in the food system and they have projects, policies or even an overall strategy.

Furthermore, the role and department of the persons whom participated to the meeting or answered to the survey necessarily influenced the type of information and answers that were given. It must also be noticed that participants were not necessarily able to provide an overview

of all their city activities related to food, nor were they necessarily aware of the type of projects and initiatives their city is engaged into.

Definitions

Food strategy: is the document which reflects the vision of a city of its food system and how it strives towards this change. A 'food strategy' is the document which sets out a long-term vision for food.

Food policy: a food policy is any set of decision, program or project, part of a bigger strategy, that is endorsed by the municipal government which effects how food is produced, processed, distributed, purchased, protected and disposed.

Food practice: a food practice is any actions resulting from or a part of a strategy or policy which may include administration, coordination, direct service, etc. related to the city's food system.

Definition of policy instruments:

a) Governance of the urban strategy and its innovative component: definition and scope of explicit component or focus area raised by the city or its citizens, actors actively involved in the decision making or the implementation; the existence of a roadmap, or targets or monitoring of progress;

b) Public sector innovation: the extent to which the city has implemented reforms in their administration and policy making process, e.g. open government, use and sharing of open data directly or indirectly relevant for the food area, new forms of delivery of service, reforms in human resources management and risk taking;

c) Big data and digitalisation: the form and strategy for the use of digital solutions and the access to public and private Big Data in the facilitation, implementation and monitoring of the urban food strategy;

d) Enabling physical and digital infrastructure: the investment in the roll-out of new physical or digital infrastructure which facilitate or enable the roll out of innovative food solutions;

e) Citizen's involvement and social innovation: The form and level of engagement of citizens, consumers and civil society and organisations in the transformation process in particular for the research and innovations actions. This can also include citizen's science on food related research in urban spaces.

f) Science diplomacy: whether the city participate in global initiatives for sustainable development goals (e.g. Habitat III) or in bilateral dialogue with innovation and transformation processes in other cities.

g) Financing instruments: the mobilization of private funding, citizens crowd funding, public funding sources (e.g. local budget, regional structural fud, Horizon 2020 research and innovation projects, national R&I budget) and combination of innovative public and private financing instruments.

h) Technology-based solutions: the role and extent to which new and existing technologies and research are identified and used as part of the more comprehensive solutions for the food challenges of cities.

i) Research institutions, universities and innovative firms: the extent and form of involvement of these institutions in the design, implementations and monitoring of the urban food strategy

j) Public procurement of innovation: the use of public procurement for sustainable production, delivery and consumption of food in the city. The procurement could cover sustainable existing product and services or functionalities for innovative solutions not yet in the market.

k) Regulatory innovation: the applications or exploration of innovation deals, green deal, regulatory "sand boxes", more stringent standards and regulation or other form of innovation-friendly regulations.

l) New business models: private and corporate experimentation or implementation of new business models for sustainable and healthy, production delivery and consumption of food in cities

m) Value chains and open innovation business models linking the city with the food producers' and the surrounding rural areas: the relation between the cities and food producers and innovation firms in the new value chains

n) Attractiveness: the attractiveness of the city for innovative European or global firms aiming at testing their innovation in the city and with more advanced consumers.

Annex 2: List of participating cities and use of sources

CITY	MUFPP best practice book	MUFPP award application 2016	MUFPP monitoring framework	C40 survey	Food smart city for development project resources	EUROCITIES focus group meeting	SURVEY
Antananarivo, Madagascar							x
Almere, The Netherlands	x		x			x	
Amsterdam							x
Athens, Greece	x			x		x	x
Barcelona, Spain	x				x		x
Bari, Italy							x
Bilbao, Spain							x
Birmingham, UK		x	x			x	
Bruges, Belgium	x	x	x		x		x
Brussels, Belgium							x
Bucharest, Romania							x
Cork, Ireland							x
Dakar, Senegal							x
Doula, Cameroon							x
Edinburgh, U.K.						x	
Frankfurt am Main, Germany							x
Genoa, Italy							x
Gent, Belgium	x		x		x	x	
Gothenburg, Sweden						x	x
Ljubljana, Slovenia							x
Métropole de Lyon, France	x	x	x			x	x
Melbourne, Australia							x
Mexico City, Mexico		x		x			x

Mieres, Spain							x
Milan, Italy	x		x	x	x	x	x
Modena, Italy							x
Mollet del Valles							X
Paris, France	x		x	x			x
Parma, Italy						x	x
Porto, Portugal						x	x
Preston, U.K.							x
Quito, Ecuador	x	x	x	x			x
Rome, Italy							x
Riga, Latvia		x	x				x
Rotterdam, The Netherlands				x			
S hertogenbosch, The Netherlands							x
Shanghai, China	x	x					x
Tel Aviv-Yafo, Israel	x	x	x				x
Tirana, Albania							x
Toronto, Canada						x	x
Turin, Italy	x	x	x		x	x	
Venice, Italy						x	
Vitoria Gasteiz, Spain							x
Warsaw, Poland			x				
Zagreb, Croatia							x
Zaragoza, Spain							x

Targeted cities of these research were EUROCITIES members (figure 16) and MUFPP signatory cities (figure 17).

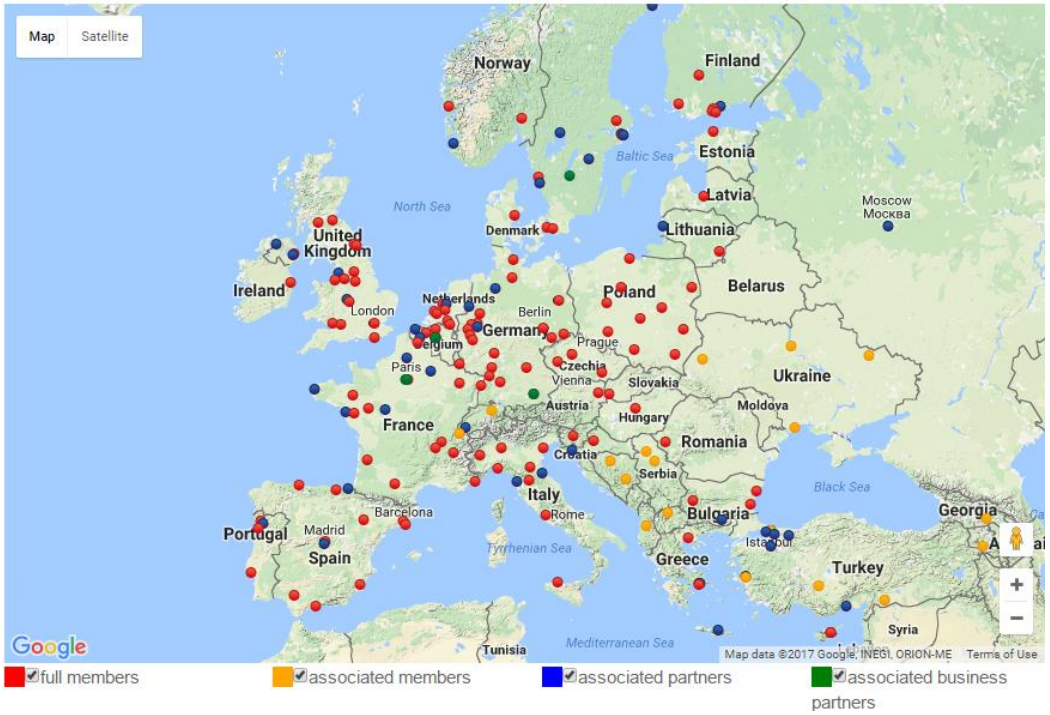

Figure 16 EUROCITIES members map

Figure 17MUFPP signatory cities

Information were directly collected by 46 cities from Europe (figure 18) and the world (figure 19) of different size and geographical importance. In the report, additional information from other cities were added in the study due to their innovative strategies or activities (i.e. Berlin), even if they did not provided direct information.

Figure 18Participating cities in the EU, with overview of size

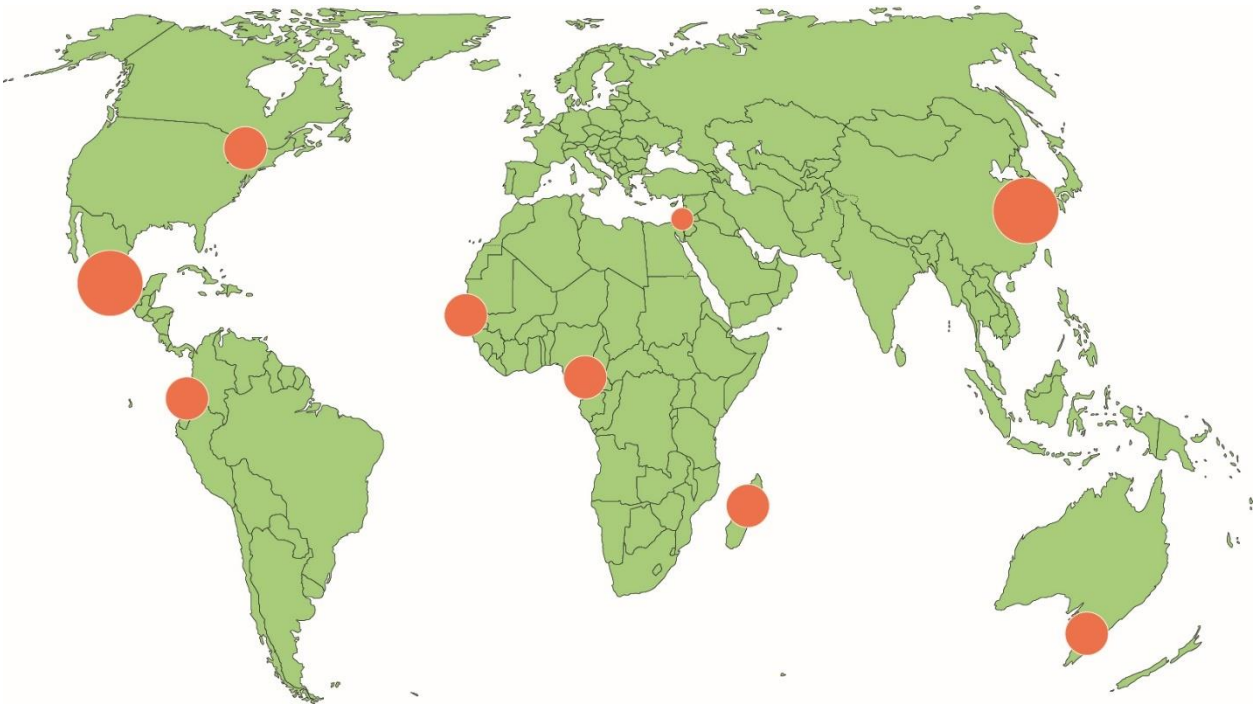

Figure 19Participating cities from outside the EU/Europe

A strong effort was made toward contacting smaller cities and cities from Centre and East of Europe, but with little success. Cities from the East of Europe that participated to the survey were not able to described their activities in most of the sectors (i.e. Tirana and Bucharest).

Through the EUROCITIES network we engaged cities like Prague and Warsaw. Officers from the city of Prague explained that their activities are mainly citizens led and the city does not yet work on food related activities.

Annex 3: The survey

Food in cities: study on innovation for a sustainable and healthy production, delivery and consumption of food in cities.

Dear city representative,

This survey has been developed in cooperation between EUROCITIES, the city of Milan, the Milan Urban Food Policy Pact and the university of Cardiff, as part of the European Union funded project "F*ood in cities: study on innovation for a sustainable and healthy production, delivery and consumption of food in cities.*".

This study aims **to get a better overview and understanding of the food innovation dynamics in cities** as well as the role that European Union projects for research and innovation can play in supporting them.

Please answer as many questions as you can. If your city is not active in a particular area of work, simply skip the questions.

Most of the questions have a simple yes/no option, with the possibility to comment and provide additional answers, therefore it should not take long time to fill in.

This document is provided as simple guideline to the questions present in the survey. To provide your final answers please use this link: https://www.surveymonkey.com/r/QC5RCKK

Alternatively feel free to contact us for a quick phone call, we would be happy to have a chat with you!

Many thanks for your kind cooperation!

In case of questions or doubts do not hesitate to contact Anja De Cunto at Anja.decunto@eurocities.eu, +32 2552 0867

SECTION 1 - START

1. **City and Country**

2. **Contact name, role and department, e-mail address**

3. **Does your city have a strategy/policy/practice related to food?**
   - Yes, it has a comprehensive food strategy, policy and/or action plan
   - Yes, the city has some programmes and projects related to food
   - Not yet, but the city is currently working on a strategy/action plan or policy related to food
   - No

4. **If you answer yes, please provide links here to relevant material related to your strategy, policy or good practice.**
   a. Name of the strategy or policy?
   b. Link if available
   c. Which city departments are involved?

5. **Does the city have an internal body responsible for advisory and decision making regarding the formulation and/or implementation of food policies and programmes?**
   If yes how is it structured?
   Yes/No, add comments

6. **Do you considere your strategy/policy/practice related to food innovative? If yes, why?**
   Yes/No, add comments

7. **If you currently do not have a strategy or defined policy, what would be your future city ambitions related to food in your city?**

   Add comments

SECTION 2 -
CITIES ACTIVITIES

8. **Is your city involved in the definition of one or more of the European Union policy/ directive related to food? If yes, which ones?**

- o Yes, we have a clear set of overall objectives which we are clearly communicated at the EU level
- o Yes, we are strongly pushing a particular policy
- o Not yet, but the City is currently working on it
- o No, it is not in our interests
- o Other, please specify

9. **Has your city benefitted from European funded projects related to food, by being partner or simply being involved (for example, by taking part to a study or capacity learning event)? If yes, which one/s?**

   Y/N add comments

10. **Has your city benefitted from a solution or best practice developed in the framework of a European project? If yes which one, what was the project?**
    Yes/No, add comments

11. **Are you aware of which is the percentage of food imported or exported in your city? if yes, please add.**
    Y/N, comment

12. **Are you aware of how much of the food consumed in your city is produced in the rural areas surrounding the city, at national level or abroad? Do you have overall percentages? Please add.**
    Y/N comment

13. **Does your city have any innovation and research capacity (presence of universities or research centers or business clusters specialized in food research)?**

    Y/N comment

14. **Is your city part of a regional development plan, in particular smart specialisation strategy?**
    Y/N comment

15. **Does your city's food procurement guidelines include criteria such as % of local food, % of seasonal food, % of recyclable packaging, % from fair trade etc?**
    Y/N comment

16. **Has your city used innovative procurement methods in relation to its food strategy/policy/good practice?**
    Y/N comment

17. **What is the percentage of children who are entitled to free school meals?**

    - <30 %
    - <70%
    - >70%

SECTION 3 –

USE OF POLICY INSTRUMENTS IN RELATION TO THE MUFPP FRAMEWORK

18. **Does your city currently have any ongoing (one or more) activities in one of those category of the Framework for Action of the MUFPP?**

Category 1: GOVERNANCE: ensuring an enabling environment for effective action Y/N
(For example: facilitate collaboration across city agencies and departments, enhance stakeholder participation, integrate local initiatives into programmes and policies, develop urban food policies and plans, multisectoral information systems for policy development, develop a disaster risk reduction strategy)

If yes:

Name of the strategy or policy	
Link if available	
Department which is leading/coordinating it	
Engaged stakeholders and key actors	• Public sector Y/N • Regional government Y/N • Central government Y/N • EU/international institutions and organizations Y/N • Third sector (NGOs, associations etc) Y/N • Research sector Y/N • Private sector Y/N

	• Schools Y/N	
Policy instruments (please see annex)	• Governance (Municipal decrees, guidelines or strategic documents, city's food and urban agriculture strategy or other relevant information) Y/N • Big data and digitalization Y/N • Physical and digital infrastructure Y/N • Citizen involvement and social innovation Y/N • Science diplomacy Y/N • Financing instruments Y/N • Technology based solutions Y/N • Research institutes, universities and innovative firms Y/N • Public procurement of innovation Y/N • Regulatory innovations Y/N • New business models Y/N • value chains Y/N • Attractiveness Y/N	
Is your strategy/policy capable of being **transferable/replicable/adaptable** to other city and territorial or even national contexts?	Y/N	Notes:
Could you calculate the average cost for the implementation of your strategy/policy/good practice? Which funding and financing sources do you use in the city?	Y/N	Notes:
Does the implementation of the strategy/policy imply a strong collaboration between city's departments, thus a **multi-level** and cross sectorial effort?	Y/N	Notes:

(If your City is undertaking more than one policy you wish to share, please copy and paste the chart and fill it with data of the second policy)

Category 2: SUSTAINABLE DIETS AND NUTRITION Y/N
(For example: promote sustainable diets, address non communicable diseases, develop sustainable dietary guidelines, make sustainable diets and safe drinking water accessible, encourage joint actions by health and food sector)

If yes:

Name of the strategy or policy	
Link if available	
Department which is leading/coordinating it	

Engaged stakeholders and key actors	• Public sector Y/N • Regional government Y/N • Central government Y/N • EU/international institutions and organizations Y/N • Third sector (NGOs, associations etc) Y/N • Research sector Y/N • Private sector Y/N • Schools Y/N	
Policy instruments	• Governance (Municipal decrees, guidelines or strategic documents, city's food and urban agriculture strategy or other relevant information) Y/N • Big data and digitalization Y/N • Physical and digital infrastructure Y/N • Citizen involvement and social innovation Y/N • Science diplomacy Y/N • Financing instruments Y/N • Technology based solutions Y/N • Research institutes, universities and innovative firms Y/N • Public procurement of innovation Y/N • Regulatory innovations Y/N • New business models Y/N • value chains Y/N • Attractiveness Y/N	
Is your strategy/policy capable of being **transferable/replicable/adaptable** to other city and territorial or even national contexts?	Y/N	Notes:
Could you calculate the average cost for the implementation of your strategy/policy/good practice? Which funding and financing sources you use in the city?	Y/N	Notes:
Does the implementation of the strategy/policy imply a strong collaboration between city's departments, thus a **multi-level** and cross sectorial effort?	Y/N	Notes:

(If your City is undertaking more than one policy you wish to share, please copy and paste the chart and fill it with data of the second policy)

Category 3: SOCIAL AND ECONOMIC EQUITY Y/N

(For example: use cash and food transfer, reorient school feeding programs, promote decent employment in the food and agriculture sector, encourage social and solidarity economy activities, promote networks and support social inclusion through food, promote education, training and research)

If yes:

Name of the strategy or policy		
Link if available		
Department which is leading/coordinating it		
Engaged stakeholders and key actors	• Public sector Y/N • Regional government Y/N • Central government Y/N • EU/international institutions and organizations Y/N • Third sector (NGOs, associations etc) Y/N • Research sector Y/N • Private sector Y/N • Schools Y/N	
Policy instruments	• Governance (Municipal decrees, guidelines or strategic documents, city's food and urban agriculture strategy or other relevant information) Y/N • Big data and digitalization Y/N • Physical and digital infrastructure Y/N • Citizen involvement and social innovation Y/N • Science diplomacy Y/N • Financing instruments Y/N • Technology based solutions Y/N • Research institutes, universities and innovative firms Y/N • Public procurement of innovation Y/N • Regulatory innovations Y/N • New business models Y/N • value chains Y/N • Attractiveness Y/N	
Is your strategy/policy capable of being **transferable/replicable/adaptable** to other city and territorial or even national contexts?	Y/N	Notes:
Could you calculate the average cost for the implementation of your strategy/policy/good practice? Which funding and financing sources you use in the city?	Y/N	Notes:

Does the implementation of the strategy/policy imply a strong collaboration between city's departments, thus a **multi-level** and cross sectorial effort?	Y/N	Notes:

(If your City is undertaking more than one policy you wish to share, please copy and paste the chart and fill it with data of the second policy)

Category 4: FOOD PRODUCTION Y/N

(For example: promote urban and peri-urban food production, promote urban-rural linkage, use an integrated approach in urban planning and management, protect and enable access to land, support food producers and shot food chains, improve water waste management)

If yes:

Name of the strategy or policy	
Link if available	
Department which is leading/coordinating it	
Engaged stakeholders and key actors	• Public sector Y/N • Regional government Y/N • Central government Y/N • EU/international institutions and organizations Y/N • Third sector (NGOs, associations etc) Y/N • Research sector Y/N • Private sector Y/N • Schools Y/N
Policy instruments	• Governance (Municipal decrees, guidelines or strategic documents, city's food and urban agriculture strategy or other relevant information) Y/N • Big data and digitalization Y/N • Physical and digital infrastructure Y/N • Citizen involvement and social innovation Y/N • Science diplomacy Y/N • Financing instruments Y/N • Technology based solutions Y/N • Research institutes, universities and innovative firms Y/N • Public procurement of innovation Y/N • Regulatory innovations Y/N • New business models Y/N • value chains Y/N • Attractiveness Y/N

Is your strategy/policy capable of being **transferable/replicable/adaptable** to other city and territorial or even national contexts?	Y/N	Notes:
Could you calculate the average cost for the implementation of your strategy/policy/good practice? Which funding and financing sources you use in the city?	Y/N	Notes:
Does the implementation of the strategy/policy imply a strong collaboration between city's departments, thus a **multi-level** and cross sectorial effort?	Y/N	Notes:

(If your City is undertaking more than one policy you wish to share, please copy and paste the chart and fill it with data of the second policy)

Category 5: FOOD SUPPLY AND DISTRIBUTION Y/N
(For example: Map the food flow, support improved food storage, processing and logistics, review food procurement and trade policy, provide policy and programmes support for municipal public markets, improve and expend support for infrastructures)

If yes:

Name of the strategy or policy	
Link if available	
Department which is leading/coordinating it	
Engaged stakeholders and key actors	• Public sector Y/N • Regional government Y/N • Central government Y/N • EU/international institutions and organizations Y/N • Third sector (NGOs, associations etc) Y/N • Research sector Y/N • Private sector Y/N • Schools Y/N
Policy instruments	• Governance (Municipal decrees, guidelines or strategic documents, city's food and urban agriculture strategy or other relevant information) Y/N • Big data and digitalization Y/N • Physical and digital infrastructure Y/N • Citizen involvement and social innovation Y/N • Science diplomacy Y/N • Financing instruments Y/N

	• Technology based solutions Y/N • Research institutes, universities and innovative firms Y/N • Public procurement of innovation Y/N • Regulatory innovations Y/N • New business models Y/N • value chains Y/N • Attractiveness Y/N	
Is your strategy/policy capable of being **transferable/replicable/adaptable** to other city and territorial or even national contexts?	Y/N	Notes: …..
Could you calculate the average cost for the implementation of your strategy/policy/good practice? Which funding and financing sources you use in the city?	Y/N	Notes:
Does the implementation of the strategy/policy imply a strong collaboration between city's departments, thus a **multi-level** and cross sectorial effort?	Y/N	Notes: …..

(If your City is undertaking more than one policy you wish to share, please copy and paste the chart and fill it with data of the second policy)

Category 6: FOOD WASTE Y/N

(For example: Raise awareness of food loss and waste, save food by facilitating recovery and redistribution for human consumption of safe and nutritious foods, improve food waste management)

If yes:

Name of the strategy or policy	
Link if available	
Department which is leading/coordinating it	
Engaged stakeholders and key actors	• Public sector Y/N • Regional government Y/N • Central government Y/N • EU/international institutions and organizations Y/N • Third sector (NGOs, associations etc) Y/N • Research sector Y/N • Private sector Y/N • Schools Y/N

Policy instruments	• Governance (Municipal decrees, guidelines or strategic documents, city's food and urban agriculture strategy or other relevant information) Y/N • Big data and digitalization Y/N • Physical and digital infrastructure Y/N • Citizen involvement and social innovation Y/N • Science diplomacy Y/N • Financing instruments Y/N • Technology based solutions Y/N • Research institutes, universities and innovative firms Y/N • Public procurement of innovation Y/N • Regulatory innovations Y/N • New business models Y/N • value chains Y/N • Attractiveness Y/N	
Is your strategy/policy capable of being **transferable/replicable/adaptable** to other city and territorial or even national contexts?	Y/N	Notes:
Could you calculate the average cost for the implementation of your strategy/policy/good practice? Which funding and financing sources you use in the city?	Y/N	Notes:
Does the implementation of the strategy/policy imply a strong collaboration between city's departments, thus a **multi-level** and cross sectorial effort?	Y/N	Notes:

(If your City is undertaking more than one policy you wish to share, please copy and paste the chart and fill it with data of the second policy)

SECTION 4 –

CITY DESCRIPTION (framework conditions of the city)

54. Geographical extension
- Urban area Y/N
- Metropolitan area Y/N

55. Population size

- less than 50 000

- between 50 000 and 100 000
- between 100 000 and 250 000
- between 250 000 and 500 000
- between 500 000 and 1 000 000
- between 1 000 000 and 5 000 000
- of more than 5 000 000

56. Population characteristics: age structure (percentage of young people, older)

57. Poverty rate
- < 15%
- < 15 – 25%
- > 25%

58. Obesity or overweight rate

- < 15%
- < 15 – 25%
- > 25%

59. Percentage of third country nationals in your city:
- < 10%
- < 10 – 20%
- < 20 – 30%
- < 30 – 40%
- < 40 – 50%
- > 50%

60. Geographic location and characteristics
- Costal sea used in the hinterland of the city
- Mountain area
- Level ground
- Proximity to a river
- Agricultural land used in the hinterland of the city

61. Climate conditions
- Tropical wet
- Tropical wet and dry
- Arid
- Semi-arid
- Mediterranean
- Humid subtropical
- Marine West coast
- Humid continental
- Highlands

SECTION 5 -

Further comments or suggestion

Please feel free to share with us any additional information that might be of interest for our project.

Annex 4: Minutes of the focus group meeting "Cities food innovation"

Minutes of the

EUROCITIES WG food meeting

8-10 February, Birmingham

Short overview meeting:

8 Feb. (Optional)	18.30-21.00	**Food Matters: Sustainable Diets and Nutrition** **Tackling Diabetes and Obesity in Birmingham.**
9 Feb.	9:00-12:30 13:30-16:00 16.00-17.30 19:30-21:30	**Focus group meeting "Food in Cities"** **EUROCITIES Working group food meeting** **Study visit to City Kitchen** **Reception at Harborne Food School**
10 Feb.	9:30-12:30	**Birmingham City Centre Food Tour** OR **"Peas Please" meeting in Cardiff** (require separate registration and travel arrangements)

- All presentations are available at https://drive.google.com/open?id=0B4DrLzanZ--HeUZmN05xTXdtZFU
- Pictures are available at https://goo.gl/photos/iYNVnLPh4qhe3ZeE9

8 February: "Food Matters: Sustainable Diets and Nutrition"- Tacking Diabetes and Obesity in Birmingham

The University of Birmingham hosted and sponsored a workshop and networking event for EUROCITIES WG FOOD participants along with researchers, local policymakers, food entrepreneurs, public health professionals.

- Dr Adrian Phillips, Birmingham Public Health, Tackling the Obesogenic Environment – Nutrition & Sustainability

Dr Adrian Phillips, the Director of Public Health at Birmingham City Council, kicked off the evening with a presentation providing an overview of the current health challenges facing the city of Birmingham, namely diabetes and obesity. He also highlighted a number of schemes and initiatives going on in the city.

- Using Community-Based Research for tackling issues surrounding food and health – Prof Janice Thompson, University of Birmingham

Prof Janice Thompson Presentation's centred on utilising a community-based approach in relation to confronting food and health issues.

- Community Based Action to Inform Local Food Policy – Angela Blair, Sandwell Council

Angela Blair gave an insightful presentation into Sandwell Council's 'informal' local food policy which also used a bottom-up approach. Furthermore, she detailed the challenges facing smaller regions in comparison to cities.

- Food production with the EU Climate-KIC scheme; food security and social activism in the French Caribbean - Dr Louise Hardwick, University of Birmingham.

Dr Louise Hardwick is Senior Lecturer in French at the University of Birmingham and she provided an alternative perspective when conducting research related to food. Her work was primarily based on food activism and food security in former French colonies in the Caribbean. She also provided information on her work with an EU Climate-KIC scheme.

- The Bigger Picture…. Influencing National Food Policy – Anna Taylor, The Food Foundation

All Presentations can be found in the WG FOOD Google Drive.

9 February: Focus group meeting "Food in Cities"

Councillor John Cotton, Chair of Health, Wellbeing and the Environment Overview & Scrutiny Committee, City of Birmingham and Dr Adrian Phillips, Birmingham Public Health

The councillor was involved as chair of EUROCITIES Social Affairs Forum as well as an initiative for active inclusion initiative in cities. There is a high degree of economic activity in the city and currently numerous construction sites. Birmingham is one of the most diverse cities in the UK. The primary challenges facing the city relate to poverty and inequality. Seven years of austerity and public spending cuts have had a profound effect on their ability to provide services.

Cinzia Tegoni, WG chair from the city of Milan and Anja De Cunto, EUROCITIES

Opening of the Working Group meeting and welcome by Cinzia Tegoni, from the City of Milan. She expressed her delight in convening this meeting and was happy to see representatives from the various participating cities. Anja De Cunto provided a brief overview of EUROCITIES as an organisation and the primary aims and objectives of the Working Group Food, which was launched only in June 2016 as a results of the Milan Urban Food Policy Pact.

This focus group meeting is part of the research conducted by EUROCITIES, the city of Milan and the university of Cardiff on behalf of the European Commission for the project "*Food in Cities*". The focus group aims to discuss the role of innovation within urban food strategies. Notably, the role of research and innovation, new governance structures and innovative public procurement. Food in cities is still very much in its infancy, despite the very recent developments, further research is needed to understand the work undertaken by cities.

The main objectives of this Focus Group meeting are to:

- Gain a better understanding of cities activities within the domain of food.
- Gather evidence on the needs of cities in the area of food research, which will input the future research and innovation EU funding programmes (i.e. Horizon 2020 and future ones for the period 2021-2028)

Each participant briefly presented themselves, their role and interest in the WG FOOD. The vast majority of participants are not food experts per se, however they are all keen to enhance their knowledge and understanding of the current urban food policy landscape.

- **Gothenburg**'s representative's role is project manager for food strategy.
- **Preston** has a food strategy, but the representative is not a food expert.
- **Edinburgh** has a food plan and charter already developed.
- **Venice** is focusing on the social aspect of food, they expressed their desire to learn more about food strategy in other cities.
- **Ghent** already has a food strategy in place, but is always looking for additional inspiration from cities.
- **Porto** has recently created a new division for health promotion it the city. They aspire to develop a strategy around food and to learn from other cities.
- **Birmingham** has adopted a neighbourhood learn and sharing community based approach. They have a wealth food day together with an Anglo-Italian project.
- **Athens** has a laboratory for food policy and they are interested in using urban farming to inspire people to eat healthier food, particularly in collaboration with schools.
- **Utrecht**'s public health and food is part of the health department, but is coming to the political agenda, working together to help develop city projects.
- **Turin**'s environmental office has recently received a strong political push with the new Mayor. They already have a defined agenda for food and wish to take an integrated approach to food. Among the activities there is the promotion of vegetarian-vegan diet for public events and school districts.
- **Almere**'s overall vision for the city is to create a sustainable 'green city'. Planning is underway for the 2022 Floriade Expo, food is one of the themes.
- **Sandwell** is a smaller area, not a city and therefore has a different perspective to a certain extent, but they are keen to learn from initiatives and projects underway in cities.
- **Lyon**'s key focus is agriculture and food policy, in particular the potential of peri-

urban agriculture.

The participants were seated at four tables and divided into groups. Each table consisted of a mix of officials from different cities to ensure that knowledge exchange was maximised.

Each city was invited to discuss and present their innovative city activities around the four following areas, with a particular emphasis on the role of research, new technologies and social innovation.

1. Food waste
2. Governance & Sustainable diets and nutrition
3. Social and economic equity
4. Food production & Food supply and distribution

1. Food Waste

To tackle food waste, there is a need for behavioural changes for society as a whole. For example, an important issue in food waste reduction is that food in schools is centrally produced, which often does not allow to prepare different meals or adjust the portions and type of food which is being served. Also in schools, the vegetables are very often the 'discarded' food; awareness raising programmes for schools are present in almost all cites.
Issues regarding difficulties in separating waste collection in cities is a shared common challenge, especially for food.

Below are some examples of how food waste prevention or re-use is treated in various cities:

- In Portugal, some restaurants have introduced a scheme called *"right price menu"*. Restaurants have reduced their portion sizes and its costs, thus allowing more people to access restaurants, even during the crisis. **Porto** is working on limiting the size of food portions in schools; for example, younger children should get less food. In **London** there is a scheme which weighs bins in restaurants to show them how much waste they are producing and also how much money they are losing.

- In **Bologna** an initiative knowns as the '*Community fridge experience'* is being developed. A common WhatsApp group of people from the same building and or from the same neighbourhood which allows them to share the food they cannot consume. This is a citizen led initiative.

- In **Venice** there is currently no project from the municipal level related to food waste reduction. There are informal agreements with supermarket chains which provide food for soup kitchens and charities. These schemes are run by voluntary associations and charities. One major source of waste is a results of regulations which require most food to be thrown away due to safety reasons.

- **Brussels** has a project underway called 'Food battle'. It involves a competition between two streets or neighbourhoods. The winner is the side which has created as little food waste as possible.

- In **Edinburgh** the new Scottish policy of 'zero waste' aim to enabling the recycling of all type of waste. Local authorities have to pay financial penalties for waste which is going to landfills. Measures to reduce food waste include: the distribution of leftovers such as fresh vegetables and exported produce to food kitchens and charities; community fridge schemes would allow for the donation of food surpluses in the local community; food recovery programmes as an employment, training and empowerment vehicle for volunteers and asylum seekers.

- **Gothenburg**'s municipality collects food waste from residents. This in turn is used to make biogas which is used by the city's buses. The '*Gothenburg model for food waste*' involves disseminating ideas in public schools, elderly homes along with educational information for teachers and kitchen staff in order to increase awareness.

- **Sandwell** spoke about the importance of building design for food waste collection, such as those in schools, social houses and hospitals. The notion of incentivizing food waste reduction via a reward was also brought up, this could take the form of a reduction in taxation.

- **Ghent** currently has a food waste reduction programme called '*Resto Restje'*. It promotes the use of doggy bag in over 100 freely participating restaurants. In the city there are also a number of citizens' initiatives such as 'adopt a pig' and 'adopt a chicken'.

- The city of **Almere** has initiated a project called *'City without waste'*. It aims to drastically cut waste production. The scheme invites supermarkets to re-use or give away over 10,000 kg of leftover food annually. There are also plans to establish supermarkets targeting the lower socio-economic segments of the population. The city also has an *'upcycling'* station, this process converts old or discarded materials into something useful and often beautiful.
  The aim of the city is to reduce the annual total waste from a family household from 180kg to just 50kg. Early researches indicated that individuals and families throw excess food away and take minimal actions to conserve or re-use food. Introducing separate waste containers highlights to households the type of waste they are producing and its economic implications.

- **In Birmingham** the general public as customers already pay for waste through taxation. In the city, there are knock-on effects of accumulating waste in the streets such as rats and disease threats. Solutions for food waste prevention or collection have to be different between the rural and the urban area. In Birmingham, there are no statistics, on the different type of waste available in the city, but their respective municipalities have detailed figures related to the breakdown of waste per sector and Birmingham overall has good recycling rates. Food waste collection still does not happen in the cities and there is a need to improve collaboration with citizens on improving means for waste collection.

- **Turin** is primarily focused on changing consumers' lifestyles and choices in order to tackle waste management. One obstacle the city has encountered so far, regards the renegotiation of the current waste management contract, which the city has signed. The desire is to have a policy whereby people would pay for what they throw away. They also want to empower asylum seekers by providing them a role in distributing unsold food at markets. A similar project was undertaken in **London** and was used as a basis for the proposal.

- The city of **Utrecht** encourages companies and knowledge institutions to come up with new ideas on how to reduce waste. They do this through a competition, the winner receives a small amount of financial support to implement the idea. This process is open to all type of organisations. Utrecht also collaborates with the RUAF Foundation to create a map of the city-region food system. This mapping has identified four specific areas where additional work can be done, food waste being one.

- **Athens** was involved within a LIFE project which looked at the promotion of bio-waste. The municipalities collect green waste in order to produce compost. The project has finished, but the actions and best practices are being continued.

- **Lyon** is developing some awareness raising programmes for adults.

Some conclusions

- A number of cities are working on the promotion of biogas and compost as recovery products of food waste.
- Several simple actions from cities are possible for food recovery and the promotion of solidarity activities: for example, the promotion of doggy bags in restaurants and even canteens, as in Milan, or collaboration with different associations for food waste prevention (as solidarity groups or citizen's group).
- London is experimenting with different ICT tools, like apps, which aim at improving food waste prevention in restaurants.
- The design of houses and public buildings has an impact of food waste collection. In the case of big public infrastructure such as hospitals and schools, new designs are necessary to facilitate waste sorting and collection.
- Most cities still lack 'real' data for household waste production, which hampers the policies which can be put in place.
- In many EU funded projects and initiatives food waste still lacks the involvement of a social dimension which is fundamental for food waste prevention and re-use strategies.
- Calls were made to revamp the waste management pricing structure so that people pay for service based on the quantity of waste they have produced.
- The current 'waste' culture of supermarkets must be altered. In Spain, Amsterdam and Milan, officials are seeing rivalry between markets and supermarkets. There should be an environment whereby they call to co-exist in harmony and complement one another.
- Encourage behavioural changes, for example by weighing food waste in restaurant bins and motivating changes to be made. The creation of a Sustainable Restaurant Associations could be a solution.
- Almost all cities have programmes focusing on healthy food and food waste prevention in schools.

Governance & Sustainable diets and nutrition

All of the participants agreed that dealing with food is a governance challenge, both at city level and among different levels of governance. There is a need to set up a cross cutting structure within municipalities, in order to work effectively on food governance.

Many cities have recently created food councils or have at least a dedicated person working on food in the city.

Food governance requires that top-down and bottom up approaches to be interlinked in order to create successful outcomes. Political will and backing counts for little without the communities' involvement.

Cities officials also noticed that poorer people are often buying more ready-made and less healthy meals. This calls for further work to be done in terms of educating people on the benefits of cooking meals themselves, as they are healthier and often cheaper.

Below are some examples of how food governance and support for sustainable diets is done in various cities:

- Twelve cities in the **Netherlands** are now working together on a **city-deal initiative**. City-deals are new types of instruments which have been developed to encourage collaboration between local governments and national governments on different topics, food being among these. The city deal calls for a more sustainable and integrated approach to food production. It also encourages cooperation among the cities and knowledge institutions and companies to work on health and innovation. Work is starting in February 2017 with the aim to gain further insights at the local, regional and national level as further work needs to be undertaken in relation urban-rural linkages. In the **Netherlands,** all the food production is fragmented, there are no links between local production through to consumption. Work is underway on a digital platform to aid policy-makers in tracking food work. The National government is also involved, particularly in promoting improved regulations at a national level. Utrecht and Almere have living labs working on food, they hope to learn and bring their experiences to make sure it is transposed at the national level.

- In **Edinburgh** the Food for Life Partnership involves collaboration between the NHS, Edinburgh City Council and the University of Edinburgh. It aims to tackle barriers to providing seasonal, fresh, local and organic food; getting more sites in Edinburgh working with the Food for Life Catering Mark standards; helping more people understand the benefits of healthy and sustainable food; and making sure all the impacts of our work are captured and evaluated fully.

- **Gothenburg** has set itself a number of public procurement goals, including: having only 100% organic meat, reducing the overall amount of meat in school meals, having upwards of 40% organic food for public sector employees.

- **Ghent** has a food strategy 'en Garde' is an online platform which allows citizens to become active and engaged within the process. The representative also discussed the idea of using a business-to-business model for short chain supply. Exchanges amongst farmers using such methods could encourage others to join in.

- **Porto** explained that there is proposed legislation in Portugal to create a sugar tax, with revenue generated being re-invested into health promotion. They also expressed their desire to see municipal land being used for urban farming.

- **Lyon** has an open call for citizen's budget (3million euros for 5 years) to finance different types of projects, food could be one such topic. A similar approach is in place in Ghent.

- **Venice** wants to undertake a mapping exercise of the different stakeholders active in the city within the food sector. Venice does not have a real city strategy, just good practice stemming from citizens and informal groups. They realize that they need further collaboration with the research sector to develop a scientific approach to food and more emphasis on the local economy. There is a need to collaborate with local social farmers (for integration of migrants and the poor). The experience of social farming is continually growing. Venice also present some of the difficulties they encounter in engaging with the private sector. They acknowledged that they need to provide something in return for companies' commitment. Public procurement in Venice is currently not linked to school canteens. Currently almost 70% of the food in the school is organic, but they cannot ensure that it is local. **Venice** provided details on their small working group which studies processes on small farms, organic farming etc. The commitment from these stakeholders is very strong. However, to increase engagement, there needs to be additional help with regards to providing them information about the various funding mechanisms available to them. One idea which was put forward was that of providing public spaces for markets, provide the overall structure and connections between small projects. There are approximately 11 apps which help poor people to locate food sources, mainly involving churches or social communities. There is an informal agreement between supermarkets and these social associations. The city decided not to get involved. Similar initiatives are in place in **Almere** and **Athens**.

- **Birmingham** stated that it has traditionally been the health department which handles issues related to food due to the issue of child obesity in the city. Birmingham has a 'Food Council' which focuses on six activity strands: Nutrition & public health; Food poverty & food insecurity; Food safety & integrity; Urban food growing; Food & the city economy and Global food security. The board includes the most relevant people at the highest level, such as politicians and directors. The council decides on the priority topics (i.e. obesity). As a follow-up, a strategic obesity group was set up which, among others, decided on the restriction of further development of fast food chains (a restriction to prevent any new fast-food restaurants locating in close proximity to schools, minimum of 800 meters). In the UK, **Sustainable Food Cities** is using a cross-sectoral partnership involving local public agencies, businesses, academics and NGOs committed to working together to make healthy and sustainable food framework. They also collect data on food for example on: price, availability, spaces available, awareness of fresh, locally sourced food, waste, energy etc. Birmingham is implementing a Digital Initiative Strategy as part of their smart city initiative. Some of those innovation elements could be brought over for urban food policy.

- **Athens** is looking to tighten procurement regulations for kindergartens, schools and canteens for the poor. City officials would like to have more support on how to improve their tendering process and include healthy food.

- All the cities in **Portugal** are responsible for kindergartens and school food supply for the canteens, the same applies in **Italy**.

- **Turin's** Strategic Food Plan incorporates governance issues. It engages 45 people who represent the myriad of actors within the city's food system. The city of Turin has also established a 'food commission', this engages with the private sector and has various links with stakeholders along the food chain including universities and public sector institutions. The overarching aim is to provide quality food for all citizens. The establishment of a Food Council is currently being debated as it could be

something coming only after the further elaboration of their strategy. **Turin** noted that in their specific case that no compensation provided in relation to collaborating with private entities. One element identified is the need for the correct people to be involved. They need to believe in public food, civic engagement as crucial components and remain poorly underutilised thus far. **Turin** provided details on 30 projects established and the steering committee which was set up. Furthermore, a feasibility study was undertaken to assess the practicality of the plan overall.

Some conclusions:

- It is necessary to create platform that includes the different societal strands within cities and to understand the missing regulations which are required at local, regional, national or EU level. The platform also enables citizens to exchange and co-create solutions in relation to food. Schools are particularly important in this system.
- Developing the "political" commitment of mayors to favour food policy is a key first step. Cities can act as facilitators to connect experiences and promote and support good practices.
- Cities can also establish a Food Commission which involves both the public and private sectors to develop innovative projects for economic development and advise on public food policies.
- Cities can use open Innovation to encourage the development of ideas from different groups of actors.
- Many cities are far off from developing a monitoring framework and indicators on food policy.
- The city can support the voluntary involvement of different organisations to work at a community level. Engagement at the highest political level is fundamental as in the case of the city of Turin, where the latest political changes brought the major's work towards food related activities.
- The use of data is an emerging trend, particularly in relation to the assessment of the policies which is fundamental. For example, the city of Almere collaborates with their data centre (TNO) to collect data also on social projects. Data collected are food prices, availability of fresh food to map "food deserts" and energy production from waste.
- Collaboration with universities is also fundamental as they often provide pertinent mapping exercises vis-à-vis cities food activities. Looking to the future, the digital strategy of cities could incorporate a food dimension.
- In many smart specialisations strategies, the food component is still missing from the green economy area.
- Communities are undertaking initiatives without being part of formal programmes

Food Production and Food supply & distribution

Several cities are considering food production possibilities within the delimitations of the cities, even if only few of them have potential available rural spaces (primarily cities which are also metropolitan areas). New possibilities for local food distribution are created in cities by using green forms of transport such as bikes and electric vehicles. Solutions are often citizens' led initiatives which look to create direct links between producers and consumers.

Several issues and solutions highlighted by participating cities:

- In **Birmingham,** 13% of their citizens' calories are consumed while eating out. A key solution to this is to train the next generation of chefs in healthy and nutritional eating. Awareness raising actions in food schools is important, but they also need to raise awareness along the entire supply chain. **Birmingham** has used the funds provided by the plastic bag fee (5 pence) to invest in social-health programmes, like the "Holiday lunch clubs" created to promote "farm to fork programmes" and food banks. In the UK, there is fruitful collaboration with large supermarkets. i.e. the levy from plastic bottles is used for corporate social responsibility. The government is considering the possibility of implementing a tax on fizzy drinks. The **UK's 'Meal on Wheels'** programme is an established example of a public service being used within a food context.

- **Lyon** presented the topic of agro-ecology and the links between the food production process and ecology. In the metropolitan area, there are incentives for farmers to reduce the use of pesticides and water pollutants. Farmers receive funding and advice on how to reduce their use of pesticides. The Metropolitan area is working both on the re-localisation of production and incentives for farmers to join short-supply chains projects by encouraging:
  - Farmers Markets
  - Farmers Shops
  - Online Shopping from Farmers Market + Collection
  - Informal Citizen Group purchasing

  Lyon now has also a programme in place where it is possible to order online from a farmer's market and then pick up the food later on.

- **Almere** has put in place a number of new methods for food distribution mechanisms. One of these examples is the *PICKNIC* initiative, which involves companies focusing on distributing local products via electric cars or bikes. It was noted that supermarkets are expected to offer similar delivery services in the coming years due to the increasing public demand. Almere's water strategy is trying to promote food distribution through shipping. For the moment, there are very high costs associated with it and they need to scale up this initiative. Almere is also looking into possibilities for bio-products. The use of labels for bio food gives certification for food quality in Almere.

- **Venice** stated that logistics can often be complicated as the geographical component plays a strong factor. In Venice, local farmers from the mainland deliver their products by boat. The city only has large supermarket chains or expensive organic shops, and very few city markets. The Venice Urban gardens network is situated on one of the largest islands and is used as a base for distribution of local products. The urban gardens are managed by networks of citizens. It also hosts workshops and group activities, which create awareness-raising in relation to food and sustainability. The city has made efforts toward supermarket chains to better collaborate with local markets which are near. Local markets are scaled proportionally towards the city dimensions and population, there's a wide choice of organic and local products available. The city has a local association bike system for delivery which transports farming products, they work with some public institutions.

- In **Athens**, production boxes are provided to schools to teach pupils how to grow their own vegetable. This initial small scale project has now been expanded to 130 schools. They wish to create a laboratory for food production, however there is still no concrete actions being taken.

- A similar experience is taking place in **Porto** for schools with a social innovation project on '*ugly fruit*': local farms distribute malformed fruit to small business or families also with the goal of diminishing food waste and encouraging local consumption. City officials are also working on promoting a sugar tax at the national level.

- **Turin** has 42 neighbourhood markets. However, there is an issue with vendors going to large markets and struggling to find locally sourced products. The municipality acknowledges that further action is needed in this sense. The issue of cost persists, local suppliers must be encouraged to engage with wholesalers in order to get the best price possible for their products. The city is also collaborating with the university in order to better understand the impact of current urban pollutants for possible developments in urban agriculture.
- In **Gothenburg** the distribution of goods is done through bio-gas vehicles.
- **Ghent** emphasized the importance of city's having knowledge about their available urban lands and welfare organizations. Ghent also has a Community Food Garden programme which revolves around producing and cooking food along with social activities, the land is provided by the city's partnership.

Some conclusions:

- There is a need for a dedicated "Food Policy Director/Officer" in every city.
- Cities often don't know the total amount of land at their disposal. Data and collaboration with university researchers in this field is appreciated.
- Agro-ecology is emerging as a new approach which is being encouraged by cities in their territories. This is necessary to ensure that the food that citizens are supplied with is healthy and 'clean' from pesticides.
- Agro-food technology remains in the shadows. None of the cities are currently looking at it.
- Urban agriculture can be a very expensive exercise to undertake for cities. The regional level does not support this as a priority and EU funds do not go to local authorities. EU Regulations are also not facilitating the process, rather they hinder it at present.
- Developing a Food Policy for a city takes time. IT tools are important as they facilitate stakeholder involvement.
- Cities find themselves having to pay external experts in order to provide a preliminary analysis, set the vision and priorities, followed by concrete actions.
- More information and research is necessary on business to business projects, new business models, and innovative way to connect farmers with retailers and consumers.

Social and Economy Equity

Food is an interesting tool for promoting social integration, for example through the creation of social kitchens and projects which support the employment of certain segments of the population.

Here are some examples of the actions implemented by cities in relation to social and economic equity:

- **Lyon** has many community gardens: these were born as a tool for social inclusion, but they are now shifting towards food production. **Lyon** believes a productive approach would be to work on food quality at schools via the introduction of more vegetarian meals and projects based on behavioural changes.

- **Birmingham** is experiencing an increasing problem with homelessness. Increased funding from actors such as the EU could help to alleviate some of these issues. However, impact of Brexit could put a stop to this. Birmingham is considering possibilities to set up holidays kitchens in order for children from deprived families to still have access to one healthy meal per day. Birmingham has a lot of allotments of local food productions which are being used by local communities, but planning regulations have been loosened and developers have been given priority when it comes to land use. Food banks in the UK have been quite successful and don't experience massive surpluses.

- **Venice** continues to see social solidarity as a key challenge for the city. There is an ever-increasing risk of poverty. People don't want to be perceived as being poor and therefore don't often engage with social programmes which seek to address those issues. Venice has also a scheme in place which involves social farms which employ people with social difficulties or disabilities. Urban gardens have been used as advertisements for retired residents to become involved.

- **Almere** officials stated that food banks in the Netherlands have been unsuccessful due to similar reasons. A solution could lie into linking such schemes to cultural events which could change people's perceptions about such initiatives. Almere has a 'Kitchen garden under glass' programme, to promote awareness among people who don't have access to a garden.

- Cities are considering innovative urban actions, like social enterprises. **Utrecht** and **Turin** won awards in these fields. Their schemes targeted deprived areas and looked at how social innovation can be utilised to improve the reintegration of unemployed people into the workforce. Turin has ideas and plans to involve the private sector in the management of projects on public lands. Among these they want to use public funding to stimulate growth in those areas where there is food production. Turin has thought of subsidising the access to agricultural lands. In the USA there are tax reduction for urban farming rather than building constructions.

- **Porto** wants to tackle homelessness with public restaurants, funded by the municipality, which would bring together a myriad of different stakeholders. Pubic nutritionist associations could prepare balanced meals to ensure healthy diets. Social workers' teams could help to identify people which need help the most. This is a very recent strategy for Porto and is in its initial stages.

- **Utrecht** currently has a bank which is looking to invest in local schemes to promote healthiness and more balanced diets. Such an example highlights how the private sector can come in and be a beneficial partner. Food policies can have different shapes and stems from entrepreneurs and social innovators.

Some conclusions:

- More research is needed to understand where "food deserts" are located within

cities and instead focus on areas where a great variety of food is available.
- Policy makers challenge the idea the food poverty really exists; cities would need a strong tool to understand the impact of food poverty.
- A challenge is posed by the collection of small quantity of food surplus, something traditional food bank system often do not look at.
- Cities are concerned with providing urban kitchens were food can be prepared and cooked.
- The issue of promoting the right skills for the next generation of food production remains.

Cities presentation

The meeting proceeded with a few spontaneous presentations from participants on their most recent activities related to food:

The city of **Venice** presented some of their activities and project they are implementing in the city, like the 'Fuori Rotta' project and the 'Merenda Sana' (healthy snack) initiative. In the 'Fuori Rotta' project the city created an alternative map of Venice which highlights some sustainable elements for consumers, such as local market and fair trade shops.

More information:

Link to the Venice presentation

AEres website on social economy

Fuori Rotta web version

Venice Urban gardens network on Facebook

REfill water project

The city of Edinburgh has a sustainable food city plan known as ***'Edible Edinburgh'***. It's been used as a tool to help strengthen and expand the various policies, programmes and schemes related to urban food. The overall goal of this plan is to identify currents gaps, engage with stakeholders and to develop Edinburgh city as a leading sustainable food city. A cross-sectoral partnership is being used in order to achieve these aims.

Link to Edible Edinburgh Presentation

The city of **Ghent** has a food strategy in place for the past two years. This involves different strategic goals, translated into concrete projects:

1. A shorter food chain
2. More sustainable food production and consumption
3. The creation of more social added value for food initiatives
4. Reduced food waste
5. Optimal reuse of food waste as raw materials

Inspired by a similar approach in Bristol and Toronto, the City of Ghent has set up a 'food council'. The 'Gent en Garde' food policy council consists of about 25 members from various sectors, i.e. agriculture, associations, knowledge institutions and commerce.

The city has just launched a citizen budget project call of the value of 500,000 euro. This entails a process whereby citizens present and choose which projects they wish to see funding go to.

Link to the Gent en Garde strategy

The **Peas Please** is a new initiative in the UK focused specifically on vegetables and aims to increase vegetable consumption in a sustainable manner. Its overall objectives is to secure commitments from both industry and government so to improve the availability, acceptability (including convenience), affordability, and quality of the vegetable offer in shops, schools, fast food restaurants and beyond.

The impacts of Brexit are already being felt on food prices in the UK.

8 work streams have been identified together with several key obstacles, one of this is the role of local authorities.

Study visit to the City Kitchen

The group visited the City Kitchen organisation from Birmingham. City Kitchen is a civic business, part of Birmingham City Council. Their primary focus is to tackle issues such as obesity, malnutrition and to promote healthy and sustainable eating habits. They feed over 70,000 children within a 90-minute window every school day. They work work closely with the School Food Plan and ensure all of our food is fresh and nutritious.

Meal plans and menus are tailored towards the specific needs of students in any given school. They don't tell students what they should eat; they work with them to understand what they want to eat and then ensure that it meets the required standards of school food compliance. One such example provided was a school in the city which has up to 39 different nationalities.

There remain a number of challenges in promoting healthy food. Some areas of the city are full of food which is difficult to trace and high in saturated fat (i.e. chicken burgers are cheaper to buy than a piece of fruit). Young parents oftentimes do not know how to cook.

In the UK food not seen as a social activity, unlike in countries such as France.

City Kitchen takes great pride in knowing the provenience of their food. They work tirelessly to ensure the traceability of their products. They offer Universal free school meals for Grades 1 and 2 with the government providing funding. This budget allocation is currently under threat though.

Each student is allocated £2.30 pound for each meal. City Serve only receive a percentage of the cost. Therefore, they must maximise their resources. → FOOD cost is around 80 pence per meal.

Factors such as using HALAL meat contributes to higher costs. City Serve works with producers and suppliers to get the best value/price possible.

There are over 300 schools involved. They are free to develop and tailor their own specific menu in order to respect the ethnic diversity present within their school. Children can participate in the designing of the menu.

Educating children about food is crucial, but there is a clear need to involve parents as well, this is an important consideration.

Diabetes concerns remain prevalent for many children. The UK market is being deregulated and private catering firms they do not have to follow national standards for food.

City Serve pays a generous wage and is often they are not competitive in the tendering process. They prioritise food quality over everything else.

'Local' food implies that is comes from within a 40-mile radius. No food originates from within the city itself, but they venture out to nearby regions in the West Midlands.

Their tendering process gives preferences to local producers. Brexit could facilitate the tendering process to make it easier as they would no longer be burden by a number of regulations concerning procurement etc.