European Commission

Food in cities:

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

Written by Anja De Cunto, Cinzia Tegoni, Roberta Sonnino, Cécile Michel, Feyrouz Lajili-Djalaï,
Graphics: Wilma Dragonetti
July 2017

Framework contract
30-CE-0833121/0049

Research and Innovation

EUROPEAN COMMISSION

Directorate-General for Research and Innovation
Directorate A — Policy Development and Coordination
Unit A.6 — Data, Open Access, and Foresight
Contact: Johan Stierna

E-mail: Johan.Stierna@ec.europa.eu
RTD-PUBLICATIONS@ec.europa.eu

European Commission
B-1049 Brussels

Food in cities:

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

EUROCITIES, CITY OF MILAN, CARDIFF UNIVERSITY

Anja De Cunto, Cinzia Tegoni, Roberta Sonnino,

Cécile Michel, Feyrouz Lajili-Djalaï.

Graphics: Wilma Dragonetti

EUROPE DIRECT is a service to help you find answers to your questions about the European Union

Freephone number (*):
00 800 6 7 8 9 10 11

(*) The information given is free, as are most calls (though some operators, phone boxes or hotels may charge you)

Luxembourg: Publications Office of the European Union, 2016.

ISBN: 978-92-79-66947-7
doi 10.2777/752723
ISSN: 1831-9424

Contents

EXECUTIVE SUMMARY

This study aims to provide an overview of the food innovation dynamics in cities, in addition to providing evidence on the role and impact of European funded projects for research and innovation (R&I) in cities. Its findings are based on input provided by the Milan Urban Food Policy Pact (MUFPP) signatory cities and EUROCITIES members through an open survey, interviews, desk research and focus group meetings. More than 40 cities from Europe and nine cities from across the Globe participated in the survey. Among these, five cities were chosen for a more in-depth analysis of their food activities and the impact of EU funded projects for research and innovation.

The emerging role of cities in food

For a long time, food production was considered 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 in different ways: some develop comprehensive strategic documents and long-term plans, while others work on sectorial policies and projects. However, the long-term ambition for many cities is to define a comprehensive and sustainable strategy. We have found that cities are likely to do this in cooperation with different local actors and by considering the impact across different policy areas and different city departments.

Research findings suggest that food strategies can be the result of cities' own initiatives or from collaboration among cities. Collaborations can be an outcome of EU funded projects, or of a participative process in which the municipality acts as a facilitator for a wide range of stakeholders, in particular citizens' associations.

In accordance with these ambitions, the types of policy tools used by cities include: citizen involvement and social innovation; governance; innovative public procurement; and collaboration with research. Several small differences in the tools used and the types of actors involved can be noted in the six working areas related to food where cities are active: governance; sustainable diet and nutrition; social and economic equity; food production; food supply and distribution; food waste (see annex 1).

Food strategy and innovation dynamics

Food related actions are gaining priority in the agenda of cities, but they still remain a challenge as they require the integration of many segments of society, various levels of governance and collaboration between different policy areas.

From the five in-depth case studies (Rotterdam, Ljubljana, Gothenburg, Milan and Lisbon), it is possible to see that each city still has a specific department, with definite goals, which lead the food activities and work of that city. National contexts and priorities, as well as cultural norms and cultural heritage, also have an impact on determining each cities' policy focus and activities.

We have identified the following implementation gaps in the development of urban food strategies:

- Missing integration of the work across and between city departments;
- Unclear division of competences between local authorities and the regions and national level;
- Lack of multi-level governance and policy coherence;
- Missing links between research, practice and policy;
- Difficulties in inclusion of critical actors in food policy, such as citizen associations.

These gaps in implementation are often a result of the challenges that cities face in implementing urban food strategies. This can come from national or regional policies that restrict, limit or contradict municipal authority or jurisdiction in food activities, or a lack of effective multi-sector, multi-actor and multi-level engagement mechanisms. A greater ability to adopt a multi-level approach would allow for the inclusion of different food actors, such as citizen associations or regional governments.

Cities have developed many solutions, such as establishing mechanisms for the engagement of different actors. These include food councils, inter-departmental informal groups of workers and using longer planning cycles to transcend political or election cycles. It is also important to build different 'learning and exchange networks' with other local authorities and practitioner communities.

The framework conditions of cities (size or geographical location) 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. In cities currently working on food related policy or projects, we notice six types of innovation dynamic.

1. **Emphasis on community buy-in**. In contrast with conventional food policy approaches, which tend to be designed and implemented top-down, cities see their role 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**. Cities seek to enhance local actors' participation in urban food policy not only to find support for their food vision, but also, crucially, to empower those actors and to enhance social inclusion.
4. **Shortening food supply chains.** 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 has historically characterised food policy making.
6. **Translocalism**. Another important innovation introduced by city governments involves the establishment of translocal networks that aim to enhance knowledge exchange and cooperation between urban areas.

Impact of EU funded projects

Even if the recognition of the role of cities in food is recent, and therefore the number of projects looking at this topic is limited, it is possible to note that European funded projects have a role in supporting local authorities' development of food related urban strategy, policies or projects.

A variety of conditions related to the city and the way it works, as well as how the project was developed and structured, also have an influence on a project's impact in a city.

The main findings from the five case studies are summarised below:

1. When cities are **project partners** it is clearer and easier to define the impact of a project beyond its initial duration. Being a project partner supports the engagement at the political level, which is fundamental to incorporating project results.

2. **Project priorities need to be aligned with the city priorities**. Therefore, a successful project needs to have a certain level of flexibility to adjust to possible changes in political goals.

3. Research is fundamental to providing data and data analysis, **but research questions need to be defined together with the users**, in order to maximise the research and innovation projects' impact.

4. Projects have stronger impact where cities have the possibility to **learn and exchange with each other** on successful good practices.

5. **Coordination with other sources of funding**, in particular cohesion funds, is important in order to maximise the impact of different projects.

It is also important to notice differences in the methodology and impact of FP7 compared to Horizon2020 projects. Horizon2020 projects give more attention to the participation of local authorities' representatives in the project. In addition, project results develop a more holistic approach to urban issues. Virtually all cities have emphasised the added value of collaborating with research institutions and universities. Missing data, especially comparable data, hamper cities' ability to better understand their food system and food chains. Five research needs were notable among responses to our survey:

1. Research needs to support city governments to connect bottom-up and top-down food initiatives and include different types of actors, including the private sector.
2. Researchers should further enable the use of smart technology.
3. Research could support the further implementation of innovative procurement tenders, taking into consideration social and environmental standards.
4. Further research is necessary to find solutions for food poverty in cities.
5. The development of innovative solutions is necessary for urban farming development, particularly in very dense cities.

SYNTHESE

Cette étude a pour but d'offrir une vue d'ensemble des dynamiques d'innovation alimentaire dans les villes, ainsi que de fournir des indications sur l'impact des projets européens de Recherce et d'Innovation (R&I) dans celles-ci. Ces observations sont fondées sur les contributions apportées par les villes signataires du Milan Urban Food Policy Pact (MUFPP) ainsi que par les villes membres du réseau EUROCITIES au travers d'une enquête ouverte, d'interviewes, de recherches documentaires, ainsi que de réunions de groupes de discussions. Plus de quarante villes en Europe, et neuf villes à travers le monde, ont participé à l'enquête. Parmi elles, cinq furent choisies pour une analyse plus approfondie de leurs activités ayant trait à l'alimentation, ainsi que de l'impact au niveau local des projets financés par l'Union Européenne.

Le rôle émergeant des villes dans l'alimentation

La production alimentaire a longtemps été considérée comme sortant du cadre du domaine de compétence des villes, principalement car la production alimentaire se fait normalement en dehors de la ville. **Aujourd'hui, il y a une reconnaissance croissante du nouveau rôle que les autorités locales peuvent jouer dans le développement d'un système alimentaire durable.**

Les villes mettent en place des activités liées à l'alimentation de plusieurs manières : certaines développent un document stratégique intégré et planifient à long-terme, tandis que d'autres travaillent sur des politiques et des projets sectoriels. Néanmoins, l'ambition à long-terme des villes est de développer une **stratégie intégrée et durable.** Nous avons réalisé qu'il est plus aisé pour les villes de le faire en coopération avec différents acteurs locaux, tout en tenant compte de l'impact sur les divers domaines de politique publique et les différents départements municipaux.

Les conclusions de cette étude suggèrent que les stratégies en matière d'alimentation résultent soit d'une initiative propre des villes, soit d'une collaboration synergique entre différentes municipalités. Cette collaboration peut être le résultat d'un projet européen ou d'un procédé participatif impliquant de multiples acteurs, en particulier des associations citoyennes, et dans lequel la municipalité agit en tant que facilitateur.

Conformément à ces ambitions, les différents instruments de politique utilisés par les villes incluent : la participation citoyenne et l'innovation sociale ; la gouvernance ; les marchés publics innovants ; la collaboration avec le monde de la recherche.

Quelques petites différences dans les instruments utilisés et les acteurs impliqués sont à noter dans la façon dont les villes envisagent leurs activités dans les six zones de travail liées à l'alimentation : **gouvernance ; régime et nutrition durables ; équité sociale et économique ; production alimentaire ; approvisionnement et distribution alimentaire ; gaspillage alimentaire** (voir annexe 1).

Stratégie alimentaire et dynamiques d'innovation

Les activités liées à l'alimentation deviennent des priorités pour les villes, mais celles-ci représentent toujours néanmoins des défis, car elles demandent une intégration de différents segments de la société, de divers niveaux de gouvernance ainsi qu'une collaboration entre plusieurs domaines de politiques publiques.

Les cinq études de cas approfondis à Göteborg, Lisbonne, Ljubljana, Milan et Rotterdam ont démontré que chaque ville possède toujours un département spécifique s'occupant de des questions alimentaires, avec des objectifs et des secteurs définis, guidant les activités ayant trait à l'alimentation ainsi que son travail. Le contexte et les priorités nationales, ainsi que les normes et le patrimoine culturels ont également un impact considérable déterminant l'axe politique et les activités de chaque ville.

Nous avons pu identifier les lacunes suivantes dans les mises en œuvre des stratégies urbaines pour l'alimentation :

1) Un manque d'intégration du travail à travers et entre les départements municipaux ;
2) Un manque de clarté dans la séparation des compétences entre les autorités locales, les régions et le niveau national ;
3) Un manque de gouvernance à multi-niveaux ainsi que de cohérence politique ;
4) Un manque de liens entre la recherche, la pratique et les politiques publiques ;
5) Des difficultés à inclure certains acteurs cruciaux, comme les associations citoyennes, dans le développement des politiques alimentaires.

Ces lacunes de mise en œuvre sont souvent le résultat de défis auxquels les villes doivent faire face dans la mise en place des stratégies urbaines pour l'alimentation. Cela peut venir des politiques nationales ou régionales qui restreignent, limitent ou contredisent l'autorité ou la juridiction municipale dans ses activités liées à l'alimentation, ou de l'absence d'un mécanisme efficace d'engagement de secteurs et d'acteurs multiples. Une plus grande capacité à adopter une approche à multi-niveaux permettrait l'inclusion de différents acteurs de l'alimentation, comme les associations citoyennes, ou encore les gouvernements régionaux.

Les villes ont développé de nombreuses solutions, comme par exemple l'établissement de mécanismes impliquant différents acteurs. On citera par exemple les Conseils de l'alimentation, les groupes informels et interdépartementaux de travailleurs municipaux, ou encore l'utilisation de plus long cycle de planification, transcendant les cycles politiques ou électoraux. Il est également important de construire différents « réseaux d'apprentissage et d'échange » avec d'autres autorités locales, ainsi que des communautés de praticiens.

Les conditions-cadres des villes (taille ou emplacement géographique) ne semblent pas avoir une influence cruciale dans le développement d'une stratégie ou d'actions spécifiques. **Des activités similaires peuvent être observées dans des contextes géographiques différents ainsi que dans des villes de différentes tailles**.

Dans les villes qui travaillent actuellement au développement d'activités ou de projet liés à l'alimentation, nous notons six types de dynamiques d'innovation :

1) **Mettre l'accent sur l'adhésion de la communauté**. Contrairement aux approches conventionnelles des politiques alimentaires, qui ont tendance à être réalisées et mises en place de façon verticale (top-down), les villes voient leur rôle comme étant celui d'un facilitateur entre les acteurs de l'écosystème.
2) **Améliorer la participation dans le système de gouvernance**. De par l'accent mis sur l'implication de la communauté, les villes conçoivent des approches de gouvernance innovantes et des mécanismes qui ont pour but d'optimiser la participation de la société civile dans la conception et la mise en œuvre des politiques d'alimentation.
3) **Responsabilisation locale en tant que but politique**. Les villes cherchent à améliorer la participation des acteurs locaux dans les politiques urbaines d'alimentation, non seulement pour avoir un soutien de leur vision concernant l'alimentation, mais surtout, pour responsabiliser ces acteurs et permettre une meilleure inclusion sociale.
4) **Raccourcir la chaîne agro-alimentaire.** La responsabilisation a également une dimension tangible : elle implique un effort généralisé pour donner de la visibilité à l'existence, ou au contraire, au manque, de relations et de connections socio-économiques et environnementales formant le paysage alimentaire.
5) **Pensée systémique.** En rendant visible la chaîne agro-alimentaire, les gouvernements municipaux facilitent clairement le développement d'une approche systémique et innovantes des politiques alimentaires, en allant au-delà de la division production-consommation qui a historiquement caractérisé l'action politique en termes d'alimentation.
6) **Translocalisme.** Une des autres innovations importantes introduites par les villes a traits à la mise en place de réseau translocaux dont le but est d'améliorer l'échange de savoir et la coopération entre aires urbaines.

L'impact des projets européens

Même si le rôle des villes dans l'alimentation n'est reconnu que depuis peu, et que le nombre de projets financés par l'Union européenne se focalisant sur le sujet reste assez limité, il est possible de noter que **les projets européens jouent un rôle quant au soutien au développement des stratégies urbaines pour l'alimentation, des politiques ou des projets des autorités locales.**

Les conditions relatives à la ville et à sa façon de travailler, ainsi qu'à la manière dont le projet a été développé et structuré ont également une influence sur l'impact d'un projet européen dans une ville.

Les conclusions principales tirées des cinq études de cas peuvent être résumées comme suit :

1. Quand les villes sont partenaires dans un projet européen, il est plus facile et plus clair de définir les impacts de ce projet, au-delà de sa durée initiale. Etre partenaire permet de

soutenir l'engagement au niveau politique, fondamental pour intégrer les résultats du projet.

2. Les priorités du projet doivent être alignées aux priorités de la ville. Ainsi, pour être fructueux, un projet se doit d'avoir un certain niveau de flexibilité pour s'ajuster à de possibles changements des objectifs politiques.
3. La recherche est fondamentale pour fournir des données et une analyse de ces données, mais les questions de recherche doivent être définies avec les consommateurs, afin de maximiser l'impact du projet.
4. Les projets ont des impacts plus importants quand les villes ont la possibilité d'apprendre et d'échanger entre elles sur de bonnes pratiques.
5. La coordination avec d'autres sources de financement, en particulier le Fond de cohésion, est important afin de maximiser l'impact de différents projets.

Il est également essentiel de noter les différences de méthodologie et d'impact entre les projets financés par les programmes FP7 et Horizon2020. Les projets H2020 accordent plus d'importance à la participation d'autorités locales dans le projet. De plus, **les résultats du projet développent une approche plus holistique des problématiques urbaines**.

Presque toutes les villes interrogées ont mis l'accent sur la valeur ajoutée représentée par la collaboration avec des institutions de recherche et des universités. En effet, des données manquantes, et plus particulièrement des données comparables, freinent la capacité des villes à mieux comprendre leur propre système d'alimentation et leur chaîne agro-alimentaire.

Cinq sujets de recherche sont apparus comme nécessaires au terme de notre enquête :

1. Besoin de recherche pour soutenir les gouvernements locaux afin qu'ils puissent connecter l'approche ascendante (bottom-up) avec l'approche descendante (top-down) des initiatives liées à l'alimentation et inclure différents types d'acteurs, dont le secteur privé.
2. La recherche devrait d'avantage permettre l'usage des technologie intelligentes.
3. La recherche pourrait soutenir plus avant la mise en œuvre d'appels d'offre innovants, en prenant en compte les standards sociaux et environnementaux.
4. Des recherches supplémentaires sont nécessaires pour trouver des solutions à la pauvreté alimentaire dans les villes.
5. Le développement de solutions innovantes est nécessaire pour le développement de l'agriculture urbaine, en particulier dans des villes à forte densité de population.

AIMS AND OBJECTIVES

This report is a result of the project '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 food innovation dynamics in cities, and to clarify the role the EU projects for research and innovation 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): Final report, summarising main results.

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

List of abbreviations

CS0s: Civil society organisations
DEAR: Development Education and Awareness Raising programme
DG DEVCO: Directorate General for Development and Cooperation
DG RTD: Directorate General for Research and Innovation – European Commission
EC: European Commission
ERDF: European Regional Development Funds
FAO: Food and Agriculture Organisation
H2020: Horizon 2020
FP7: Seventh framework programme, EU research funding 2007-2013
MUFPP: Milan Urban Food Policy Pact
WG: Working group

THE ROLE OF CITIES IN FOOD

For a very long time, food[1] had 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[2]). 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. Fluctuating prices for basic foodstuffs and growing concerns about food security and sustainability have uncovered the systemic and evolutionary nature of the global food crisis, raising the need for a new policy agenda that accounts for the "deeply inter-locking nature of economic, social and environmental systems" (Misselhorn et al., 2012: 10). In practice, this entails the adoption of a systemic perspective that takes into account the interrelatedness of the whole food cycle (Lang and Barling, 2012) as well as the role of food within broader socio-economic and environmental policies designed to address climate change, poverty reduction, public health and social equity, In this context, there is now a growing 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 anymore, 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[3]) as part of an increasing recognition of the multifunctional potential of food in relation to health, transport, education, land use, employment generation, social inclusion and community development.

In 2001, FAO launched 'Food for the Cities', a multidisciplinary initiative that aims to address the challenges of urbanization for the urban and rural population, as well as the environment, by building more sustainable and resilient food systems. 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.

---

[1] By food we mean all the possible city activities related to food production and consumption. In the study, we have used six categories, which are in line with the MUFPP framework of activities.

[2] 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).

[3] Sonnino, R. (2016) The New Geography of Food Security: Exploring the Potential of Urban Food Strategies. The Geographical Journal, 182 (2): 190-200

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 (for example under URBACT and INTERREG).

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)[4].

[4] Center for a Liveable Future (2015) Food policy networks. *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[5]; 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 defined policies. Instead, it wants to remain action oriented.

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.

[5] 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+).

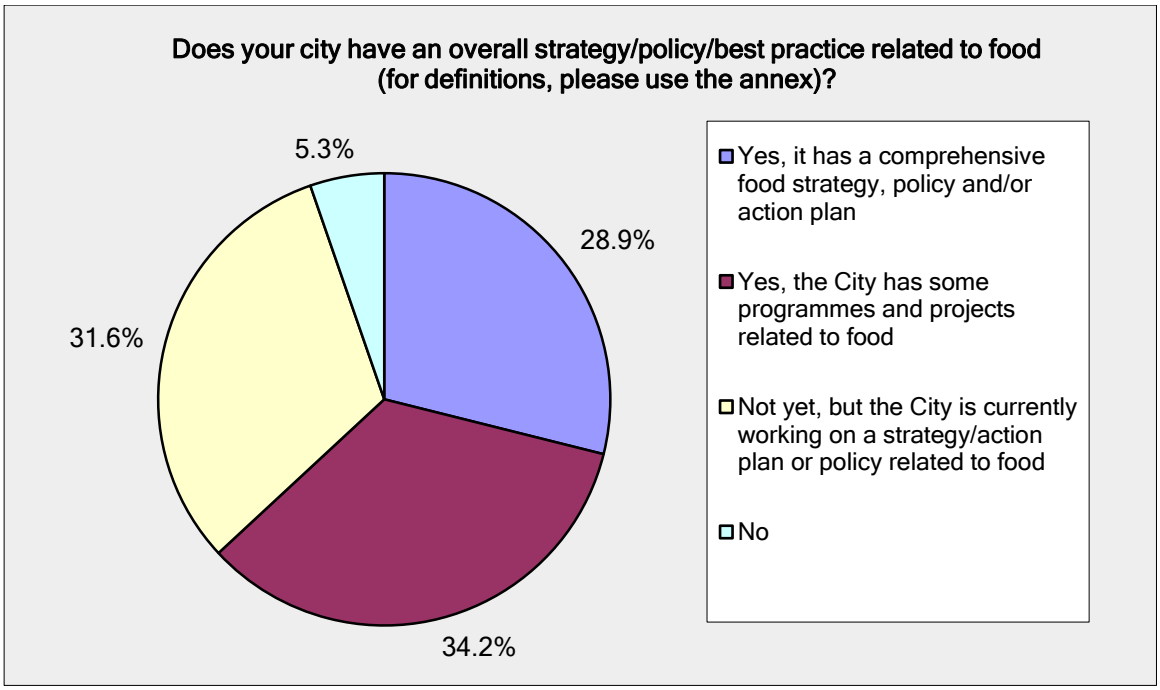


Figure 1: Percentage of cities (among respondents) with strategy or best practice related to food, number of respondent 39

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)

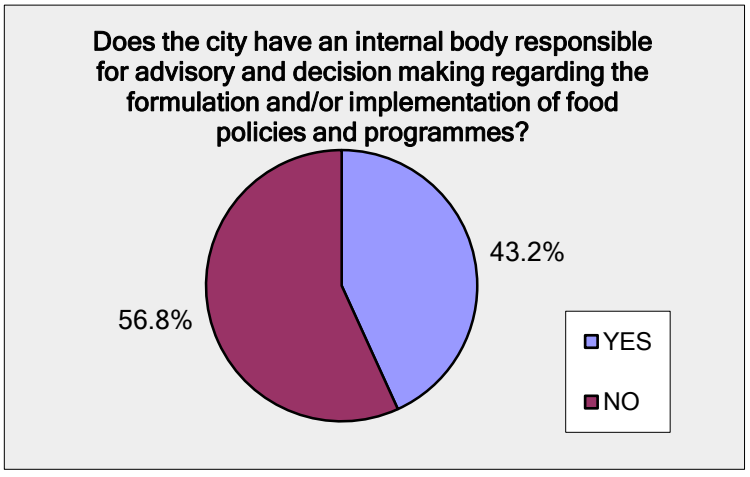


Figure 2: Presence of internal bodies responsible for making food-related decisions in cities, number of respondent 38

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).

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[6], an advisory and action group that includes different stakeholders who work together with policymakers 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 twelve cities, one province and three ministers debate and enhance food policy-related and agrifood topics.

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

MAIN FINDINGS AND RECOMMENDATIONS FOR FUTURE RESEARCH AND INNOVATION FUNDING PROGRAMMES

Many differences emerged from our five in-depth case studies in the impact that EU funded projects can have in local authorities' development of food related urban strategy, policies or projects. A variety of conditions can determine this impact: the structure of the project and its objectives and the level of involvement of local authorities' officials in the development of the project and its results.

Differences in impacts are to be found according to whether the local authority was a full partner or not in the project, which influenced the amount of time city officers could dedicate to the development or testing of project research questions and results, and in establishing political willing to use the project results.

The main findings from the five case studies are summarised below:

1) When city officials are **project partners** it is clearer/easier to define the impact of the Research and Innovation project at the city level, as the political commitment plays a key role in ensuring Research and Innovation projects' impact.

2) The projects have the possibility to **facilitate links with different organisations** and stakeholders and to provide input into the development of the food strategy.

3) Projects have a stronger impact where cities have the possibility **to learn and exchange successful good practices** with each other.

4) **Research is fundamental in providing data and data analysis**, but research questions need to be defined together with the users to maximise the Research and Innovations project's impact.

5) Often the project produces an impact in the city, but the fact that the results of the work are from **EU funding sources is not recognised**.

6) The projects need to **include different segments of society to be effective**, with clear roles in the project and assigned resources.

7) A **short project duration can impede concrete results in cities**, as impact at the local level often requires a longer time to ensure the collaboration of different actors.

8) It is difficult to **evaluate the impact of the Research and Innovation project beyond its duration**. The impact is often underestimated as some project results (tools, data, connections, etc.) continue to be used.

9) Regardless of the size of the Research and Innovation project, when it includes the **development of a city strategy**, which must be endorsed at the political level, there is a stronger project impact.

It is also important to note certain differences in the methodology and impact of FP7 compared to Horizon2020 projects. Even if the H2020 projects we took into consideration did not yet focus on urban food in a holistic way, it is possible to observe the better attention paid to the participation of local authorities' representatives in the project and the project results development. H2020 projects have also shown to have a more holistic approach to urban issues, as, for example, they focus on circular economy, nature based solutions, sustainable and efficient urban mobility, tourism and economic development for food waste reduction, which are areas of work that were traditionally treated in separate ways.

Enabling a strong impact of European project results in cities

Through the analysis of the five case studies, it was possible to extract some of the conditions which can hamper a full exploitation of the project results in cities. From these findings, we can draw a few recommendations for the future development of the research and innovation funding programme, provisionally called "FP9".

The most important condition is the presence (or not) of a strong political will of the city to work on the project priority.

1) **Include city representatives and other relevant actors active in the food system, like citizens' associations and private companies, as full project partners, with assigned resources and responsibilities.**

The participation of city officials as full partners is key to ensure that funded projects contribute to capacity building, particularly in relation to the collection and analysis of policy-oriented data on urban food sustainability. The involvement of city officials also facilitates the construction of awareness at the political level and therefore a stronger impact of the project results, which often goes beyond the duration of the project itself. City officials should also be included in the development of the research questions and project activities. The case of Milan (and other city partners of the project such as Ghent, Bruges and Utrecht) show how a project can create a long-lasting impact and create the right conditions at the local level to obtain a strong political push in a certain direction. In the case of Gothenburg, the projects were found to strongly contribute to the further development of the political priorities which had already been identified at mayor's level.

2) **Allow for more flexibility of the projects in order to accommodate any changes in political direction and priority which might take place at local level.**

The change of political priorities in the case of Rotterdam determined the emergences of new research needs which had to be answered through public procurement tenders. Some of the people we interviewed mentioned the rigidity and control of the EU funded project. However, Research and

Innovation projects are obliged to follow a certain number of deliverables and objectives even if stakeholders come up with a different strategy or priority half way through the project duration. This can then effect the project impact.

3) **Enable projects dedicated to exchanging best practice among cities.**

As in the cases of Gothenburg and Milan, projects that enable cities to exchange and learn from each other have been found to have a stronger impact in cities. As food is a relatively new area of activity for many cities there is a necessity to exchange good practice and lessons learned. A key mechanism in this respect could be the establishment of global, national and regional platforms that support the exchange of knowledge and competences and, longer-term, can provide the basis for the development of a global repository of good practices about urban food policies, programs and initiatives.

4) **Allow for longer project duration and the development of plans to ensure the sustainability of the project beyond its lifetime.**

Changes at the city level require a long time as they need the involvement of different actors. In some cases, it is possible to notice a use of project results beyond the duration of the project and beyond the cities that were involved in it. The impact of the Research and Innovation project beyond its duration is also determined by the continuity of the people involved in it at research or city level. For example, strong relationships between the local university or research centre and the local authority allow for project results to be reused and adapted, so its use continues beyond the project duration.

This is the case in the cities of Amsterdam and Almere and their collaboration with the University of Wageningen. The impact of the Research and Innovation project beyond its lifetime is mainly the result of further collaboration between city officials and researchers.

5) **Better communication of the impact of EU added value.**

While the researcher or university will know that their work and collaboration is building on the results from EU funded projects, city officials and other organisations are not often not aware of this connection.

Complementarity with other sources of funding

All interviewed local authorities had difficulties in providing a clear overview of the budget and sources that local authorities dedicate to food related actions in their city. This is mainly due to the numerous city departments involved in all the many and varied food related actions in the city, which make it hard to accurately map all the city activities related to food and their respective budget. In Milan, it was possible to find one of the clearer overviews because the city is going through the creation of a cross-departmental food officer, under the Mayor's cabinet, who is responsible for coordinating all the food related activities in the city.

In some cases, it was possible to find complementarity between the use of municipal budget and European sources of funding, such as European Regional Development Funds (ERDF), European Social Funds (ESF) for the Gothenburg case and the European Agricultural Fund for Rural Development (EAFRD) as in Ljubljana.

In the case of Rotterdam, the relatively small budget that the city receives from ERDF is mainly dedicated to economic development and business creation, which goes in line with their political priorities but is not necessarily used for the food cluster activities. In this case, most of the activities are financed through the city budget.

Milan provides a good example of a city able to build its work on multiple European projects: the work and relations initiated at local level by the Food Smart City for Development project were fundamental in providing the city with the capacity to apply for the Urban Innovative Action Fund, which allowed the city access to almost 5 million euros.

All the respondents have indicated a need for better coordination of the different EU funding programmes. A dialogue between the various EU funds would provide an added value for the various projects and allow local authorities to be able to build on the previous projects and continue the work which was started.

Also, respondents mentioned their wish for better coordination with the common agricultural programme of the EU and the urban sustainability policies which have an impact on the possibilities for peri-urban food production.

RESEARCH NEEDS

Virtually all the cities that participated in the study have emphasised the added value of collaborating with research institutions and universities in their territory on the topic of food, particularly for the development of food projects and policies. A few cities have also eve expressed their willingness increase these collaborations in the future, 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[7] and Rome is the seat of the "Food Tech Accelerator", which is a global and independent accelerator program dedicated to food technology and supported by the start-up 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 to 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. Therefore, we saw a lack of activity in that specific area.
- Additional needs are related to the necessity to improve and scale-up current solutions, and to make them more widely available at the local level.

The following needs and further research questions have emerged:

1) Research is 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 their successful urban food strategies with other cities and relevant actors.

2) Research is needed to enhance the involvement and **participation of the private sector** – some cities have had very little success on this front, particularly regarding the business-to-business aspect.

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

[7] For further information about this initiative see 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/

well-known food companies due to the quality of their food: companies had offered to provide free breakfasts 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 councils 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 3).

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

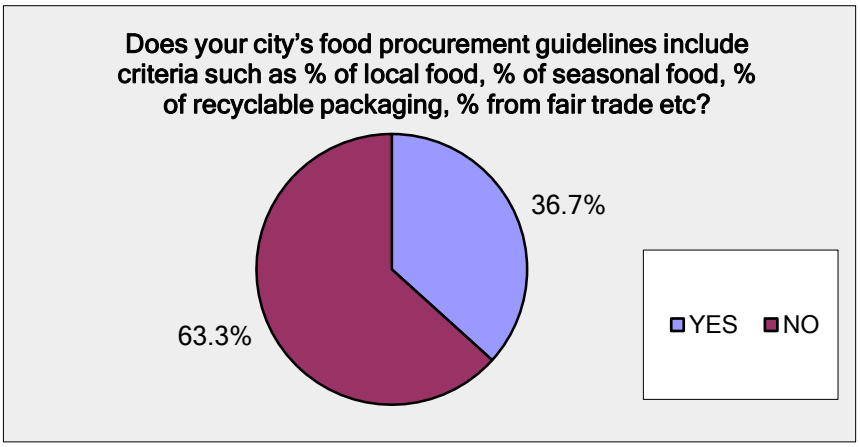


Figure 3: presence of procurement guidelines in public canteens, number of respondents 31

Council" and '*Pêche durable*'), and percentage of local and seasonal food.

Other indicators for sustainability are for example: - no use of GMO – no use of palm oil – no use of fish of deep sea fished species - 100% of eggs from free-range chickens - 20% reduction of meat products served in municipal canteens. 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.

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 4 and 5). 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) This raises the need for an assessment of urban-specific needs and policy gaps through in-depth research that provides local decision-makers with the tools they need to understand and map where their food comes from. Such an assessment should include a consideration of the urban food environment and green infrastructure and the extent to which these promote a healthy lifestyle (for example, "walkability") and facilitate access to sustainable food. 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

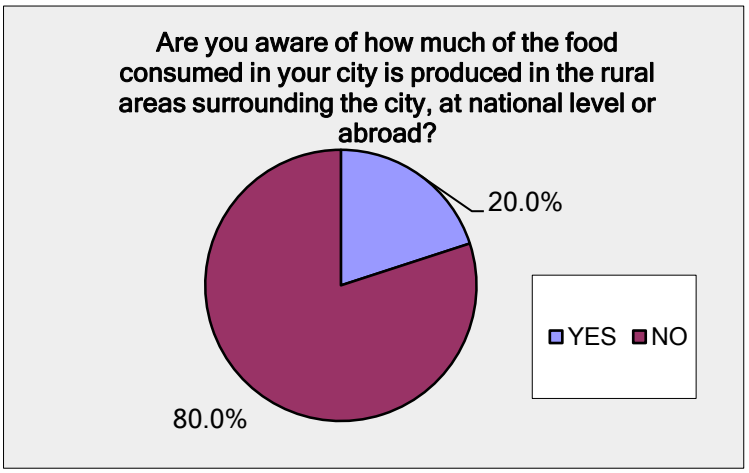


Figure 4: Level of awareness of the source of food consumed in the city, number of respondent 36

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[8]. Data should also be made comparable and be collected at national level in order to have national or even European monitoring frameworks.

8) Another emerging issue is the further development of **green and blue logistics[9]** 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[10] project).

The type of issues described above are perfectly in line with the FOOD 2030[11] 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.

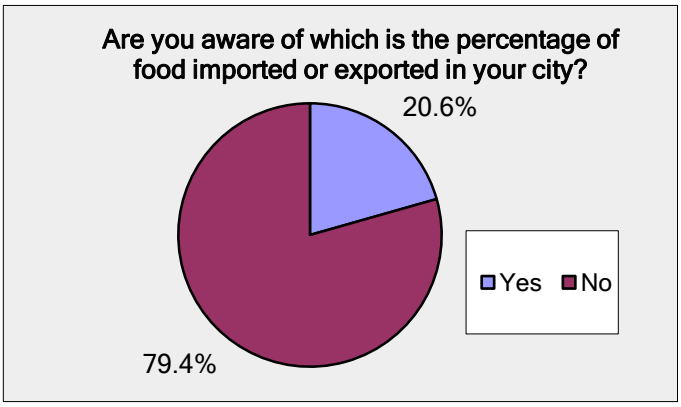


Figure 5: Awareness on the percentage of food imported or exported in the city, number of respondent 35

[8] See, for example: http://sustainablefoodcities.org/getstarted/developingindicators
[9] Blue logistics is the transport by water.

[10] https://instagreen.eu/
[11] http://ec.europa.eu/research/bioeconomy/pdf/food2030_conference_background.pdf

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.

These are also summarised in the image below (figure 6).

Figure 6: innovation elements in urban food

Source: own elaboration

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 building to share food that would otherwise go to waste) to emerge and develop on their own.

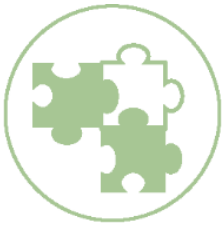
Vitoria-Gasteiz considers its food strategy innovative because it was initiated by civil society, and "the government adhered to it afterwards". Likewise, Milan considers its emphasis on "stakeholder engagement" in the design of its food policy a key innovation.

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.

There is much that cities not yet involved with urban food governance can learn in this important area of work from ongoing initiatives such as FAO-led NADHALI project, a pilot project launched in Lima, Dakha and Nairobi that aims to support decision-makers in food system planning for cities. A Rapid Food System Appraisal Tool (RUFSAT) is being developed and adapted to the local realities. The tool is applied in parallel with the establishment of the Food System Multi-Stakeholders Platform (FSM Platform), a strategic alliance aiming at ensuring that the community interests have a voice within the decision- making process while also feeding the RUFSAT with qualitative information. Significantly, the FSM Platform is considered an initial step for establishing a Food Policy Council or similar mechanism, which, in many cities of the global North, has become the

driving force, and one of the most visible signs, of the integration of sustainable food systems into urban planning and development[12].

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.

Urban food strategies often distinguish themselves for a focus on enhancing participation in the design and implementation of food policies. Implicit in this effort is the recognition that connections with a wider set of actors (beyond the traditional policy setting) are bidirectional and that reciprocal relationships contribute to building capacity within and between various sectors and actors (Sonnino and Beynon, 2015). Food, in other words, acts as both a vehicle and an object of policy change (Mah and Thang, 2013: 12). In many cities, community groups and civil society organisations have left the margins of the political arena and are actively collaborating with municipal policymakers. 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

[12] See http://www.munlima.gob.pe/noticias/1-noticias/fao-y-municipalidad-de-lima-camino-a-la-implementación-del-proyecto-nadhali

sovereignty", urban governments are devising initiatives that target the most vulnerable segments of their populations.

A vast amount of literature has long been documenting the benefits associated with producing food in the city. These include, in particular, food security benefits for urban populations that are normally neglected by long-distance food chains (Koc et al., 1999), the elimination of costly and inefficient transportation from rural areas and the recycling of waste (Redwood, 2009). More recently, city governments are working to ensure that urban agriculture is not left in a policy vacuum abd that its development maximizes social inclusion. 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 concept refers to simplified modes of food provisioning that reconnect urban food consumers and peri-urban and rural producers around sustainability values and food security and nutrition objectives. Shorter and more simplified supply chains articulate new forms of market governance, establish more just relationships across the food chain through a redistribution of value, alleviate rural poverty and promote environmentally-friendly food practices through support for local biodiversity (i.e., traditional foods), reduced packaging and reduced food losses and waste (Renting et al., 2003; Mundler and Rumpus, 2012; Proctor and Berdegué, 2016). In the urban food policy documents, the emphasis on re-localization often goes hand in hand with direct calls to re-connect the city to its surrounding region – physically, culturally, socially, environmentally and economically. There is, in short, an explicit attempt to break the rural-urban divide and develop new kinds of functional areas. 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".

Many urban food initiatives are informed by a new and much needed recognition that "complex issues are linked, there are multiple actors in the system and they are connected, and integrated solutions are required" (MacRae and Donahue, 2013: 5). Practically, this has translated into a policy approach that tends to emphasize the connections between different stages of the food system and between the food system and other social contexts and sectors. 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.

Emerging evidence shows that the re-ordering of food rights, governance and assets in one city often leads to important cross-overs of learning and reflexivity in other cities (Sonnino et al., 2016: 9). This trans-local scale is emerging as a key context to promote and formalize knowledge-exchange, disseminate good practice and potentially increase cities' collective capacity to engender positive food transformations at higher levels of governance (Blay-Palmer et al., 2016). Examples of cross-scale collaboration amongst cities include the Milan Urban Food Policy Pact (a protocol, launched in 2015, which has already been signed by more than 140 cities from across the globe), the African Food Security Urban Network (AFSUN) and the presence of food as a topical area within global urban platforms such as the Inter-governmental Council for Local Environmental Initiatives (ICLEI) and the Dakar Forum of Francophone African Cities. 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 – Cities Climate Leadership Group, which have a much broader focus.

These elements and their interactions are depicted in Figure 7.

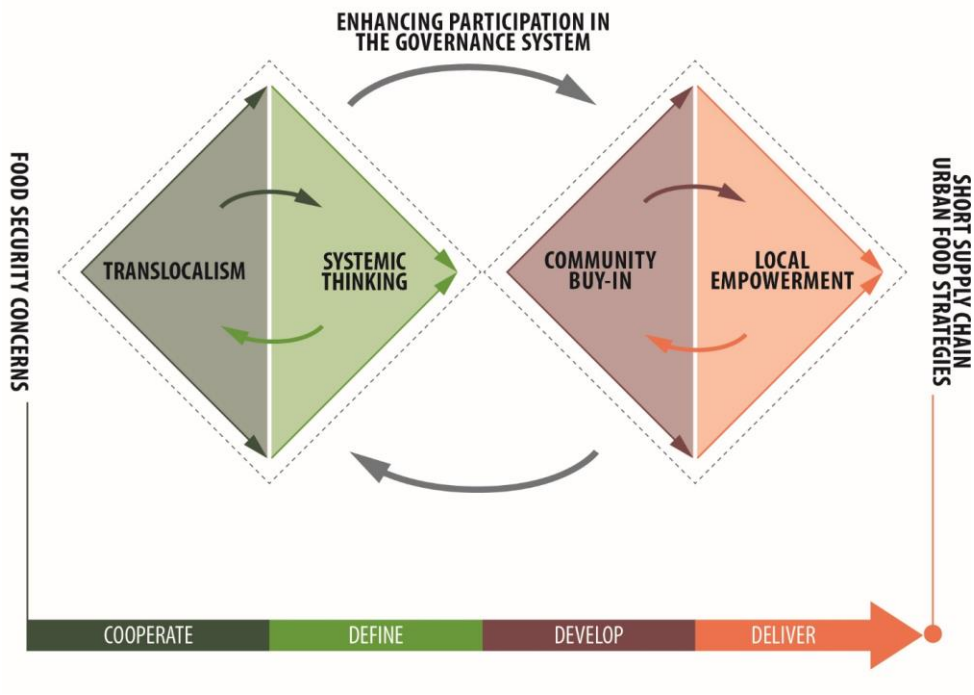


Figure 7: Innovation elements in urban food actions and their interactions

Source: own elaboration

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.

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[13] 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 annexes 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 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.

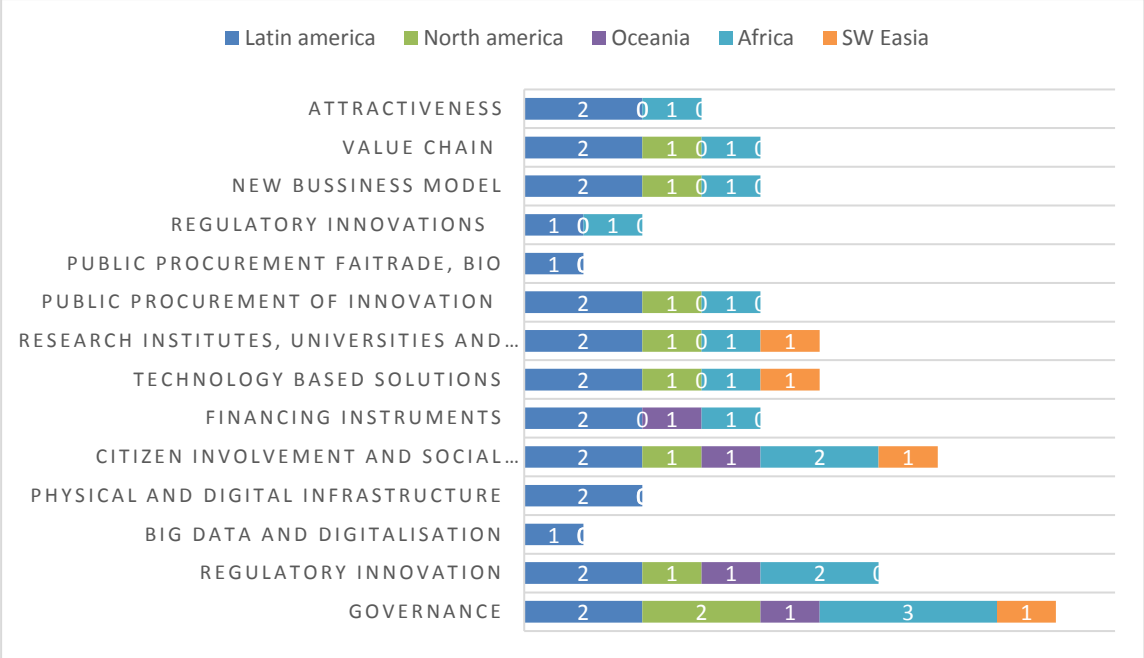


Figure 8 Overall use of policy instruments outside the EU. Own elaboration of results.

[13] Reading of data should take into consideration that only few cities outside the EU took part in the survey (see the methodology section in the annexes).

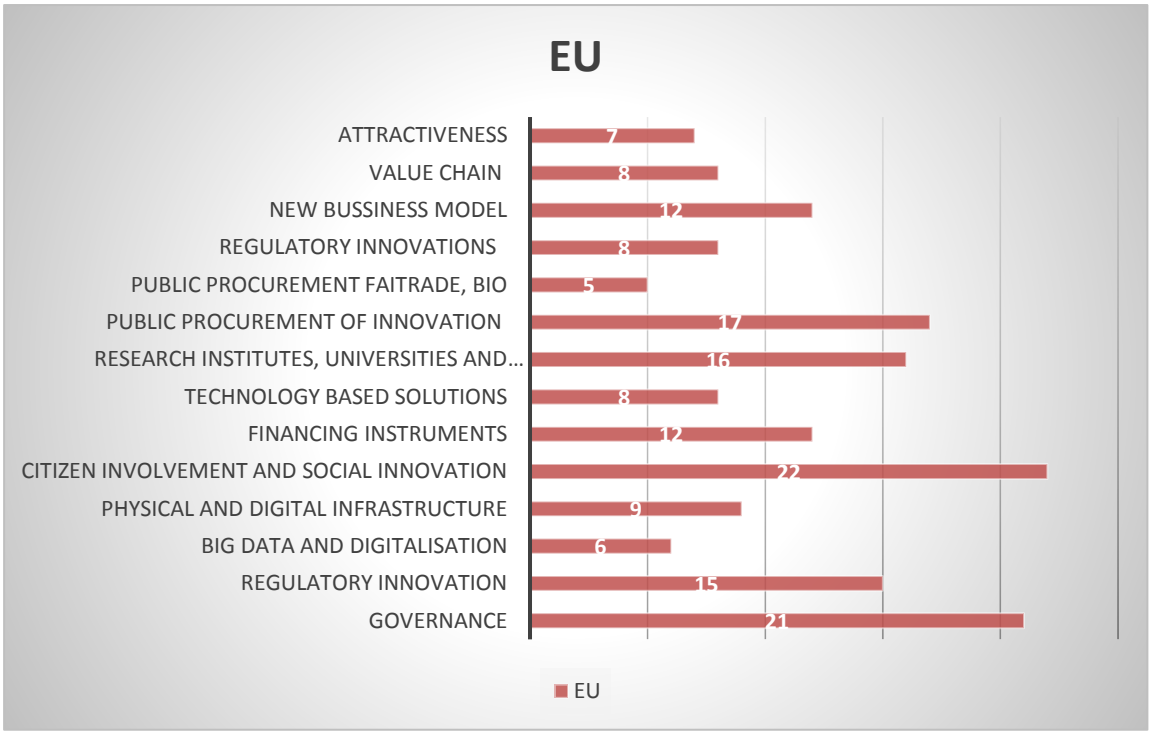


Figure 9 Overall use of policy instruments in the EU. Own elaboration of results.

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

1) **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.

2) **Governance:** Cities need to necessarily create new links across departments and different levels of governments if they wish to work on a comprehensive food strategy. Key to this end is the development of socially inclusive and technically empowered mechanisms (such as food policy councils) that promote public-private collaborations (e.g., sustainable public procurement systems) and facilitate coordination across different policy domains and governance scales.

3) **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)". Outside of Europe, one example of the integrative potential of public procurement at the city level is provided by Bogotá, which has placed school food reform at the heart of its food security and nutrition policies, viewing it as a means to address immediate situations of short-term hunger, to combat problems of long-term malnutrition and poor health, and to improve educational enrolment, attendance, retention and attainment (Garzón, 2003). Municipal efforts in Bogotá have included introducing food programs in schools that did not previously offer them; building kitchens into new and renovated schools; improving the nutritional quality of the meals served; and specifically targeting disadvantaged communities - including indigenous groups, migrants and ethnic minorities. Significantly, since these efforts were situated within a wider anti-hunger and anti-poverty campaign, they were complemented by a suite of other initiatives such as nutritional supplementation, 'community canteens', cooperative food shops, food banks and activities to strengthen local food chains and urban agriculture (Ashe and Sonnino, 2013).

4) **Infrastructural development:** Conventional policy approaches have tended to focus on either food production or food consumption, neglecting the range of sustainability issues that threaten the resilience of the food system at the post-production stage (Sonnino et al., 2014a). Sustainable food transformations depend on a recognition of the centrality of post-production stages in fostering synergistic and positive connections between urban food consumers and rural producers. 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. Particularly urgent is the development of urban planning mechanisms (such as zoning and land use regulation) that can capture the impacts of rural resource management and climate change on urban food systems and improve rural-urban cooperation to mitigate those impacts. Such mechanisms are key to support local authorities in their effort to implement a "territorial" approach that supports or creates more inclusive food markets and improves planning for agricultural production, green infrastructure and natural resource management at the urban-regional level.

5) **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. An important area of intervention here could be the development of programs and initiatives on nutritional education for food sector

operators and for poor households, which have little disposable income to pursue choice and diversity in satisfying their energy and nutritional requirements.

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 according to the six different categories used in this study, is added in annex 1:

- Governance
- Sustainable diets and nutrition
- Social and economic equity
- Food production
- Food supply and distribution
- Food waste

POLICY RECOMMENDATIONS

Food topics are working their way up city agendas, but they remain a challenge as they require the integration of many segments of society, different levels of governance and collaboration between various policy areas.

The case studies show that in many cities food related activities are still fragmented across different departments. At the same time, there is often one specific department with defined priority goals, which has a strong impact in the type of activities and work of that city in relation to food. The national context and priorities, but also culture norms and cultural heritage (such as the presence of a large number of obese children or food poverty) could determine which policies and activities the city will choose to prioritise.

Cities often face the following challenges when looking to implement food strategies:

1) Challenging or adverse political situations: i.e. food activities are not seen as a political priority.
2) Lack of participation - and therefore engagement and support - of main actors in the food system within and outside local government;
3) Absence of policy coherence among different level of governments, i.e. presence of national policies that restrict, limit or contradict municipal authority priorities or;
4) Lack of jurisdiction in food related activities, i.e. food production is often a competence of the regional level.
5) Absence of effective multi-sector, multi-actor and multi-level engagement mechanisms, among different city departments, different levels of government and different types of actors (CSOs, private sector, research organisations).
6) Missing links between research, practice and policy.

To overcome these challenges, cities have developed the following solutions:

1) Identify and select entry points for food-related activities that will be both successful and demonstrate impact, in order to build a coalition of support across government and other stakeholders and actors.
2) Use longer planning cycles to transcend political or election cycles.
3) Establish mechanisms for the engagement of different city departments, different levels of government and different local actors, such as food councils with the full and meaningful inclusion of civil society and cross-department working groups.
4) Secure parallel sectoral or multi-level governmental support (e.g. from subnational, regional or national governments).
5) Collaborate with universities and research centres to collect data and monitor the impact of the food activities.
6) Build demand-driven and mutually beneficial learning and exchange networks with local authorities at national or international level.

USE OF EUROPEAN FUNDED PROJECT IN CITIES

The following section outlines some of the results that emerged from the surveys and focus groups which were conducted during the first part of the project. The project was initially intended to select cities, and the projects where they have been involved, through a decision matrix. However, relatively early on in the study it became clear that the cities' respondents had difficulty identifying European funded projects for research and innovation that had contributed to the development of their food activities. This is also due to a very recent rise in attention to the role of cities in the food system[14].

Therefore, it was necessary to do a reverse process, where different FP7 and H2020 projects looking at food areas were researched, in order to identify their relations with local authorities and possibly an impact in local authorities' food related work. After this research, the five cities and their projects, which are the object of this study, were selected taking into consideration, as much as possible, geographical balance and differences in the type of projects analysed. The source of the chosen projects is mainly FP7 and H2020, but also URBACT, Urban innovative Actions (UIA), ERDF and EUROPEAID. The themes of the projects are also different, focusing on different food related activities (food production, consumption, delivery, food waste etc.).

The survey revealed that more than 50% of respondents had identified a European project as contributor to the development of their food related activities (see Table 1). However, a further analysis of the answer showed that there is a lot of misunderstanding, particularly from cities outside of Europe, on what was indicated as a European funded project. Cities also mentioned other sources of international support or collaboration coming from international actors (i.e. FAO, C40 organisation, etc.).

Table 1 Percentage of cities which identified an EU project as a contributor to their food work

Has your city benefitted from a European funded project related to food, by being partner or simply being involved (by taking part to a study or capacity learning experience)? If yes, which one/s?		
Answer Options	**Response Percent**	**Response Count**
YES	52.9%	18
NO	47.1%	16
Add Comments:		21
answered question		**34**
skipped question		**5**

In the following table (Table 2) have been extracted only the relevant answers provided by cities. Projects which were financed though research and innovation funding programme are added in bold.

[14] However, many of the most recent H2020 projects are focusing on urban food, i.e. SHARECITY http://sharecity.ie/ , but it was too early to see a strong impact in cities.

Table 2 Detailed answers provided by cities

Genoa, Italy	Project BAMPE - "*Bambini e prodotti di eccellenza*" – ITA-FRA Maritime funds 2011-2013 (ERDF)
Paris, France	**City Logistics in Living Laboratories (H2020)** **Think Nature (H2020)**
Mollet Del Valles, Spain	Diet for Green (URBACT), Agri-Urban (URBACT), **STEP (H2020)**
's hertogenbosch, The Netherlands	ACTTiVATe (Food and Aerospace, European cluster collaboration platform)
Barcelona, Spain	Food Smart City For Development (EUROPEAID)
City of Ljubljana, Slovenia	**Greensurge (FP7)**
Zaragoza, Spain	AgroEco cities European network (LIFE)
Milan, Italy	Food Smart City for Development (EUROPEAID); Open-Agri (Urban Innovative Action)
Bruges, Belgium	Food Smart City for Development (EUROPEAID)
Bilbao, Spain	Food Smart City for Development (EUROPEAID)
City of Gothenburg, Sweden	Sustainable Food in Urban Communities (URBACT), Making Places Profitable (INTERREG EUROPE), SEEDS: Stimulating Enterprising Environments for Development and Sustainability (INTERREG), Stadslandet Göteborg (ERUF), **RETHINK (ERANET – FP7),** Refarm Europe, Måltiden-en del i lärandet (European social fund), Restaurang, och Storhushållsprojektet i Gårdsten (European social fund), LLU Lokalt Ledd Utveckling (LEADER)
Métropole de Lyon - France	Sustainable Food in Urban Communities (URBACT)

A similar outcome emerged when cities were asked whether a specific tool, solution or best practice they were using was a result of a European funded project (Table 3).

Table 3 Percentage of cities indicating that they have benefitted from a solution developed through an EU funded project

Has your city benefitted from a solution or best practice related to food developed in the framework of a European project? If yes which one, what was the project?		
Answer Options	**Response Percent**	**Response Count**
YES	52.9%	18
NO	47.1%	16
Add Comments:		21
answered question		**34**
skipped question		**5**

However, it must be noted that city officials often have difficulty realising that the support and collaboration, or specific tools or data analysis, that they get from research centres and universities are often the result of European funded projects.

FIVE EUROPEAN 'FOOD' REALITIES

In the following section is provided an overview of the five case studies and their analysis. The complete case studies have been added as annexes to this publication.

For each case study, four areas have been investigated, through the analysis of documents and interviews with city officials, researchers and, when possible, local politicians.

The overall city strategy or actions related to food.

1) The outcomes and deliverables of the European funded project/s looking at food where the city has been involved, with a particular focus of FP7 and H2020 projects.
2) An assessment of whether these EU funded projects have contributed (or are planning to contribute, for current projects) to the overall food strategy development (or actions) of the city.
3) A look at how European funding for research and innovation has complemented the other sources of funding used by the city for the development of their food work.

The map below shows the five cities selected for in-depth case study.

Figure 10 Selected cities for in-depth case studies

The table below summarises the level of impact of the studied projects in the development of the city activities related to food, as assessed by interviews with city officers and researchers. The following categories have been used: none, limited, medium, high, extremely high.

Table 4 Overview of the cities and the projects where they have been involved and their impact

CITY	PROJECTS	SOURCE OF FUNDING	IMPACT TO THE DEVELOPMENT OF THE CITY FOOD RELATED ACTIVITIES
Rotterdam, the Netherlands	SUPURBFOOD	FP7	Medium
	FOODMETRES	FP7	Medium
Ljubljana, Slovenia	GREENSURGE	FP7	Extremely High
	FOODMETRES	FP7	Limited
Gothenburg, Sweden	RE-THINK	ERA-NET, FP7	Medium
	CLIMATE KIC	Partly funded through H2020 budget	High
	Sustainable Food in Urban Communities	URBACT	High
Milan, Italy	FOODMETRES	FP7	Limited
	Food smart city for development	EUROPEAID	Extremely high
	OPEN AGRI	Urban Innovative Actions	(expected impact) Extremely High
	U-TURN	H2020	(expected impact) High
Lisbon, Portugal	URBAN-WASTE	H2020	(expected impact) High
	FORCE	H2020	(expected impact) Extremely high

The tables below summarise the main results from the five case studies. The case studies are then considered in detail in the sections below.

Table 5 Information on food related activities and strategies in the cities

Cities	Rotterdam	Ljubljana	Gothenburg	Milan	Lisbon
Presence of a holistic food strategy	No. Is present "*The Food Cluster*" governance system, which follows the triple helix approach.	The city does not have a food strategy per se, but it is implementing a comprehensive "*Strategy for Rural Development 2014-2020*".	A comprehensive strategy is being developed, led by strong environmental considerations.	A strategy is in development. The "*Guiding Principles of the Milan Food Policy 2015-2020*" a result of a very participatory process with around 1000 stakeholders.	No. There is a "*Municipal plan to combat food waste*" dated February 2015.
Who has main competence over food activities?	The Rotterdam Food Cluster initiative is a competence of the **Economic Development department**, but other food related actions are the competence of other city departments (i.e. inclusion and food waste)	Manly led by the **Department of Environmental Protection**. The Department for Pre-school Learning and Education and the one for Health and Social Security are also involved in the management of food related issues.	The food strategy is being developed by the **Environment department**, but the Real Estate Department which manage the peri-urban lands, owned by the Municipality, is also involved into food activities.	The vice-mayor has been recently appointed as the food policy coordinator to foster an **interdepartmental approach** in the city. A food policy officer and a food communication officer will soon assist her in the role of coordinator.	Many of the activities related to food and healthy food are under the **Social and Health department**. Some projects and activities are under the Green structure and energy department.
Main areas of work in the city	Business support and economic development, research and skills, combining health/medical with food research, increasing the position of Rotterdam as main European logistical food hub (port).	Food self-sufficiency – paying attention to the socio-cultural implications of food (enfranchisement of rural people and preservation of rural culture)	Reducing drivers of climate change, urban and peri-urban farming, organic food, sustainable diets, social integration, food independence.	City sustainability through food system sustainability. Healthy food and consumer awareness. Fight against food waste. Agri-food research.	Healthy food, promoting Mediterranean regime, combat childhood obesity, green infrastructure, social inclusion.
Role of food at the national level	The Ministry of Agriculture, Nature Management and Fisheries (LNV) was merged with the Ministry of Economic Affairs. The national level supports	A new and all-encompassing strategy on Food, Nutrition & Physical Activity (FN&PA) was developed for the period 2015-2020, focusing on the relationship between food and health (combating child	In 2015 the government began to draw a long term national food strategy, that will emerge from an intensive dialogue process with companies, organisations etc.	Growing political consensus around food issues. 2016 avant-garde "Gadda law" against food waste, preferring incentives to punishments. Development of EU scheme for fruits and vegetables at school addressing child obesity.	The Directorate-General of Health is responsible since 2012 for the monitoring of the Portuguese National Programme for the Promotion of Healthy Eating, the Ministry of Health policy

	and collaborates in the City Deal initiative, a new form of collaboration between Dutch cities regarding their work on food.	obesity)		However, not an overall food strategy.	programme
Type of stakeholders involved in food policy and actions	Companies, SMEs, researchers (triple helix). To a less extent farmers, consumers and CSOs.	The successful case of GREEN SURGE saw the involvement of the Municipality, Universities (University of Ljubljana local leading partner), SMEs as official stakeholders, and of an NGO (bringing in composite group including engaged students and school dropouts) as a project partner.	Farmers, migrants, schools, NGOs (e.g. Changemaker), researchers and the university (e.g. University of Gothenburg)	The OpenAgri project involved three main institutional partners – the local chamber of commerce, Polytechnic and science and technology park). In other cases, majority of partners are academic institutions and SMEs (COLDIRETTI – Federation Italian Farmers).	National level, migrants, schools, local producers, catering private institutions.

Table 6 Role and impact of European funded projects in the cities

Cities	Projects the city is/was involved in	Summary of the impacts of the projects
Rotterdam	Rotterdam was used as case study in two FP7 projects SUPURBFOOD and FOODMETRES, both coordinated by WAGENINGEN university, a research centre in Wageningen, a small town one hour drive to the east of Rotterdam that still collaborates with the city.	The SUPURBFOOD project contributed to the further work of the Rotterdam food council, on organism which was, however, left aside by the development of the Food Cluster initiative. It also contributed to the creation of the City-country masterclasses, part of the food cluster. Researchers from FOODMETRES collaborated to the development of the Food Cluster initiative. However, project results were not used by the municipality due to the changes in political priority from short supply chain to long supply chain.
Ljubljana	Ljubljana was used as a case study in two project FOODMETRES and GREEN SURGE, two FP7 funded projects. The case studies were led by the University of Ljubljana.	The FOODMETERS research results identified a shorter food supply chain as a possible solution to the productive deficit of the Municipality. However, results have not been sufficiently disseminated among city officials. The GREEN SURGE project, on the contrary, started from the very beginning a strong collaboration with the municipality. The improvement in urban gardening gave a contribution to social inclusion.
Gothenburg	Climate KIC - partly funded by H2020 URBACT – instrument of the Cohesion Policy, co-financed by the European Regional Development Fund. Stadslandet – pilot project partly funded by the city and partly by the EU through the European Development Fund.	In the framework of Climate KIC, a new business-model, focused on public-private solutions and partnerships will be developed in cooperation with the city; the research conducted during the project will feed the future food strategy. The URBACT project allowed the city to write an Action Plan, and to share knowledge with other cities. The project Stadslandet allowed the development of many food related activities.
Milan	Food Smart Cities for Development (FSC4D) – EuropeAid FOODMETRES – FP7 (DG RTD) U-TURN – H2020 (DG RTD) OpenAgri –UIA (DG REGIO)	FSC4D raised awareness about urban food policies and sustainable development and created political value. Local Food Policy and translocal Milan Pact (MUFPP) among the deliverables. The FOODMETRES analyses struggled to reach the political agenda and it was therefore underestimated. U-Turn is aiming at developing a new model of collaborative logistics. OpenAgri the most ambitious project wants to create an open-innovation hub on peri-urban agriculture for supporting young and small entrepreneurs.
Lisbon	U-Turn and FORCE are two H2020 funded projects that have only recently started. However, the municipality of Lisbon is involved in a variety of projects under H2020, also focusing on disaster resilience, smart cities and citizen's involvement.	A strong impact is expected by these two projects in the city, especially to the improvements in cost, material and waste management hierarchy in Lisbon. The project will also look at the prevention of food waste in Lisbon, that will be reached thanks to the use of the different Apps developed by the two projects. These projects will help reducing waste production and raise awareness, but also help cities to share good practices with other local realities.

Table 7 Overview of the EU funded projects analysed

City	Projects and funding programme	What is the project about?	Starting date	Type of partners involved	Total Budget	Budget for the city	Deliverable for the city
Rotterdam	SUPURBFOOD http://www.supurbfood.eu/index.php FP7	Towards sustainable modes of urban and peri-urban food provisioning. Until recently, short food supply chains and multifunctional agriculture were considered a part of the rural development realm. This project looked at these topics from the perspective of urban, rather than rural, development.	01/10/2012 to 01/09/2015	Universities, local food consultants, agricultural networks	1 858 114,60	City not a partner	Case study on Rotterdam (http://www.supurbfood.eu/city-regions/city-region-rotterdam-the-netherlands/)
Rotterdam	FOODMETRES http://www.foodmetres.eu/ FP7	The project 'Food Planning and Innovation for Sustainable Metropolitan Regions' strives to assess both the environmental and the socio-economic impacts of food chains with regards to the spatial, logistical and resource dimensions of growing food, as well as food planning and governance.	01/10/2012 to 01/09/2015	Universities, think-tanks, agricultural and food institutes and networks, charities	1 855 911	City not a partner	Case study on Rotterdam: http://www.foodmetres.eu/case-studies/rotterdam-metropolitan-region/ and development of tools to analyse the metropolitan opportunities for food production.
Ljubljana	GREEN SURGE http://greensurge.eu/ FP7	The project identifies, develops and tests ways of linking green spaces, biodiversity, people and the green economy in order to meet the major urban challenges related to land	1/11/2013 to 31/10/2017	Universities, research agencies and foundations, cities and regions network	7 189 725,60	City not a partner	Case study on Ljubljana: http://bit.ly/2rvocfq Report: "The governance of urban green spaces in selected EU cities" (http://bit.ly/2sAlo5r)

		use conflicts, climate change adaptation, demographic changes, and human health and wellbeing.					
Ljubljana	FOODMETRES http://www.foodmetres.eu/ FP7	The project 'Food Planning and Innovation for Sustainable Metropolitan Regions' thrives to assess both the environmental and the socio-economic impacts of food chains with regards to the spatial, logistical and resource dimensions of growing food, as well as food planning and governance.	01/10/2012 to 01/09/2015	Universities, think-tanks, agricultural and food institutes and networks, charity	1 855 911	City not a partner	Case study on Ljubljana: http://bit.ly/2svQ9ZA
Gothenburg	RE-THINK http://www.rethink-net.eu/home.html FP7	Rethinking the links between farm modernisation, rural development and resilience in a world of increasing demands and finite resources	01/08/2013 to 01/12/2015	Universities, research institutions, associations for agricultural development.	2 700 000	City not a partner	Case study on Gothenburg, "Peri-urban agricultural transformations in Gothenburg, Sweden" (http://bit.ly/2szFxbJ), case study summary (http://bit.ly/2srqfNc), and poster (http://bit.ly/2srpMDT)
Gothenburg	Ecobased agroforestry CLIMATE KIC (H2020 resources)	Linking innovative models for ecosystem-based agroforestry as a key for new local strategies for sustainable interactive climate smart economic development	01/09/2016 to 01/11/2017	City of Gothenburg, municipality agencies, the Region Västra Götalandsregion en, consultancy, eco agroforestry centre	105 000	No budget	Report: Climate smart eco-based agroforestry with green business models and social sustainability Business Plan (ready by November 2017) Conference on Agroforestry.

Gothenburg	Sustainable Food in Urban Communities http://urbact.eu/sustainable-food-urban-communities URBACT	The thematic network "Sustainable Food in Urban Communities" involves ten European cities that wish to grow, deliver and enjoy more sustainable food: they are looking for joint, effective and sustainable solutions to develop low-carbon and resource-efficient urban food systems.	01/05/2012 to 01/04/2015	10 cities	695 000	50 000	Handbook: Creating Space for sustainable food systems in urban communities. Practical approaches and examples for cities (http://bit.ly/2ruSNif) Sustainable Food Report: Urban Communities Developing low-carbon and resource-efficient urban food systems (http://bit.ly/2t5Lk6e) Final thematic report: Growing (see annexes)
Milan	Food smart city for development http://www.milanurbanfoodpolicypact.org/project/ EUROPEAID	The project involves 12 urban areas over three continents that coordinated their food policy and their international cooperation activities until the end of 2016. It aims to foster the role of the cities in changing the urban food production and consumption paradigm.	01/12/2014 to 01/12/2016	8 cities, International organisations, NGOs	2.700.000	700 000	Coordinated urban food policy agenda and development of an international network of cities working on food.
Milan	FOODMETRES http://www.foodmetres.eu/ FP7	The project 'Food Planning and Innovation for Sustainable Metropolitan Regions' strives to assess both the environmental and socio-economic impacts of food chains with regards to the spatial, logistical and resource dimensions of growing food as well as food planning and governance.	01/10/2012 to 01/09/2015	Universities, think-tanks, agricultural and food institutes and networks, charity	1 855 911	City not a partner	Case study Milan region (http://bit.ly/2t5HABN)
Milan	U-TURN http://www.u-turn-project.eu/ H2020	The project will investigate and identify new models for urban food transportation to bring about environmental and societal benefits. Involving nine European partners the project focuses	01/05/2015 to 01/05/2018	Universities, companies, consultancies	2 735 542,50	City not a partner	A collaborative platform for supporting information sharing and the creation of appropriate logistics. A matching tool enabling the identification of logistics sharing matches either between different food

		on research and solutions to urban logistics in Athens, Milan and London.					suppliers supplying retail outlets or between different food producers or online food retailers supplying consumers directly.
Lisbon	URBAN-WASTE http://www.urban-waste.eu/ H2020	The URBAN WASTE project aims to help develop strategies aimed at reducing the amount of municipal waste production as well as strategies to further develop re-use, recycling, collection and disposal of waste. In doing so URBAN-WASTE will adopt and apply the urban metabolism approach to support the switch to a circular model where waste is considered as resource and reintegrated in the urban flow.	01/04/2016 to 01/05/2019	8 cities, regional authorities, universities, planning agencies, waste agencies, consultancy	4 248 782,50	124 277 000	Compendium of waste management practices in pilot cities and best practices in touristic cities. Food waste tracking system for hotels and restaurants. Later: strategy to be implemented in the city.
Lisbon	FORCE http://www.ce-force.eu/ H2020	The FORCE project aims to transform waste into value through the application of circular economy principles. The four cities involved in the project, Copenhagen, Hamburg, Lisbon and Genoa, will develop four pilot projects focused on four different products and waste chains. Each city will also build a pilot project for the other products and waste chains for a total of four projects for each city.	01/09/2016 to 01/08/2020	4 cities, universities, nature protection associations, research institutes, recycling agencies, restaurants associations	11 308 117,50	1 650 000	App online Network Tool that will manage all the information related to food surplus. Online reporting tool with performance indicator

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 a 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 to coordinate all possible areas of work related to food. However, it is 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 the 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. There is, in short, an explicit attempt to break the rural-urban divide and develop new kinds of functional areas.

Taking into consideration the variety of actions that cities and other actors active at the 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.

Even if the five case studies were conducted by different researchers from the city of Milan and EUROCITIES, the results collected all reinforced each other and went in a very similar direction: EU funded projects, and especially EU funds for research and innovation, have the potential to create a strong impact in cities and their development of food related activities and policies.

This is true even if the realisation of the role that cities play in food systems is a relatively new area of research and therefore the number of projects looking at food and cities is quite low.

However, in order to make sure that the Research and Innovation project impact is maximised, certain conditions on how the project is developed within the city need to be met.

Above all, political priorities and project objectives should be going in a similar direction. City officials and other relevant actors working on food activities in the city should be project partners, or have at least some budget to be able to contribute to the project objectives and keep informed of the project results and activities. Projects which have a more practical outcome are easier to communicate at the local level even if the role of the project, and therefore of the EU, for local actors and citizens is not always easy to understand. Projects should then allocate funding for the development of robust frameworks of indicators

that can enable cities to measure the impacts of their initiatives and adjust priorities and interventions accordingly – during but also after the duration of the project itself. Such frameworks should be utilized, along with other measures, to facilitate a timely and strategic dissemination of projects' findings.

A better coordination between different sources of funding would help cities to further develop their policies in a coherent manner.

REFERENCES

Almered Olsson G., Bruckmeier K. and Wästfelt A. (2015) Peri-urban agricultural transformation in Gothenburg, Sweden Accessed 12 May 2017 from http://bit.ly/2szFxbJ

Asgedom A., Chesami N., Edlund M., Elmqvist B., Karlsson M., Melander D., Mubiru S., Stigson P. and Ternell A. Climate smart eco-based agroforestry with green business models and social sustainability (2017)

Ashe, L. and Sonnino, R. (2013) At the Crossroads: New Paradigms of Food Security, Public Health Nutrition and School Food. Public Health Nutrition, 16 (6): 1020-1027

Blay-Palmer, A., Sonnino, R. and Custot, J. (2016) A Food Politics of the Possible? Growing Sustainable Food Systems through Networks of Knowledge. Agriculture and Human Values, 33, 1: 27-43

Garzón L (2003) Bogotà sin Hambre. Por un Compromiso Social Contra la Pobreza en Bogotá. Bogotà: Alcaldìa Mayor de Bogotà

Jégou F. and Carey J. Creating space for sustainable food systems in urban communities, practical approach and examples for cities (2015) Accessed 10 May 2017 from http://www.sustainable-everyday-project.net/urbact-sustainable-food/the-handbook/

Koc, M., MacRae, R., Mougeot, L. J. A. and Welsh, J. (1999) (eds.) For Hunger-Proof Cities: Sustainable Urban Food Systems. Ottawa: International Development Research Centre. Pp. 1-10

Lang, T. and Barling, D. (2012) Food Security and Food Sustainability: Reformulating the Debate. The Geographical Journal 178 (4): 313-326

MacRae, R., and Donahue, K. (2013) Municipal Food Policy Entrepreneurs: a Preliminary Analysis of how Canadian Cities and Regional Districts are Involved in Food System Change. Accessed 9 January 2016 from http://tfpc.to/wordpress/wp-content/uploads/2013/05/Report-May30-FINAL.pdf

Mah, C. L. and Thang, H. (2013) Cultivating Food Connections: The Toronto Food Strategy and Municipal Deliberation on Food. International Planning Studies, 18: 96-110

Misselhorn, A. Aggarwal, P., Ericksen, P., Gregory, P., Horn-Phathanothai, L., Ingram, J. and Wiebe, K. (2012) A Vision for Attaining Food Security. Current Opinion in Environmental Sustainability 4: 7-17

Mundler, P. & Rumpus, L. (2012) The Energy Efficiency of Local Food Systems: A Comparison between Different Modes of Distribution. Food Policy (37): 609-615

Pedro Graça P., Gregório M., Mendes de Sousa S., Carriço J., Correia A. and Salvador C. The Portuguese National Programme for the Promotion of Healthy Eating: 2012–2015 (2015) Accessed 5 June from http://www.euro.who.int/__data/assets/pdf_file/0006/314097/Volume-2-Issue-2-REPORT-the-Portugese-National-Programme.pdf?ua=1

Proctor, F. J. and Berdegué, J.A. (2016) Food Systems at the Urban-Rural Interface. Document No. 194, Working Paper Series, Territorial Cohesion for Development Working Group. Rimisp, Santiago (Chile)

Redwood, M. (2009) Agriculture in Urban Planning: Generating Livelihoods and Food Security. International Development Research Centre. London: Earthscan

Renting, H., Marsden, T.K. & Banks, J. (2003) Understanding Alternative Food Networks: Exploring the Role of Short Food Supply Chains in Rural Development. Environment and Planning A, 35: 393-411

Sonnino, R. and Beynon, B. (2015) Rethinking Food Governance: Urban Innovations. In Deakin, M., Diamantini, D. and Borrelli, N. (eds.), The Governance of City Food Systems. Milano: Fondazione Giangiacomo Feltrinelli. Pp. 35-48

Sonnino, R., Marsden, T. and Moragues-Faus, A. (2016) Relationalities and Convergences in Food Security Narratives: Towards a Place-Based Approach. Transactions of the Institute of British Geographers 41 (4): 477-489

Sonnino, R., Moragues-Faus, A. and Maggio, A. (2014) Sustainable Food Security: An Emerging Research and Policy Agenda. International Journal of Sociology of Agriculture and Food 21 (1): 173–88

Stanič I., Ljubljana Case Study City Portrait; part of a GREEN SURGE study on urban green infrastructure planning and governance in 20 European cities (2015)

Van der Schans JW., SUPURBFOOD Towards sustainable modes of urban and peri-urban food provisioning (2014)

FAO. Food for the cities ftp://ftp.fao.org/docrep/fao/012/ak824e/ak824e00.pdf

'EIP-AGRI Workshop Cities and Food – Connecting Consumers and Producers' https://ec.europa.eu/eip/agriculture/en/content/eip-agri-workshop-%E2%80%98cities-and-food-%E2%80%93-connecting-consumers-and-producers

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 Systems http://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/

ANNEX 1 USE OF POLICY ISTRUMENTS

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 10).

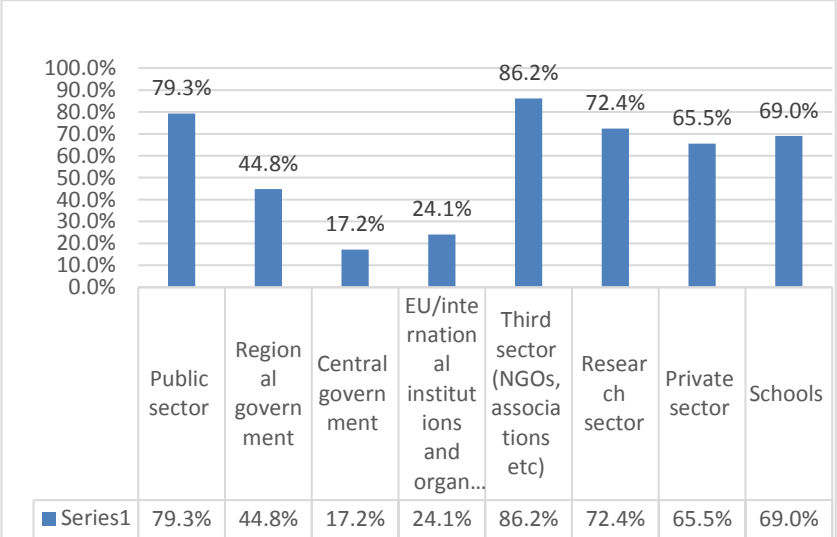


Figure 10 Types of actors involved in Category 1: Governance, on 24 respondents

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 8).

Table 8 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).

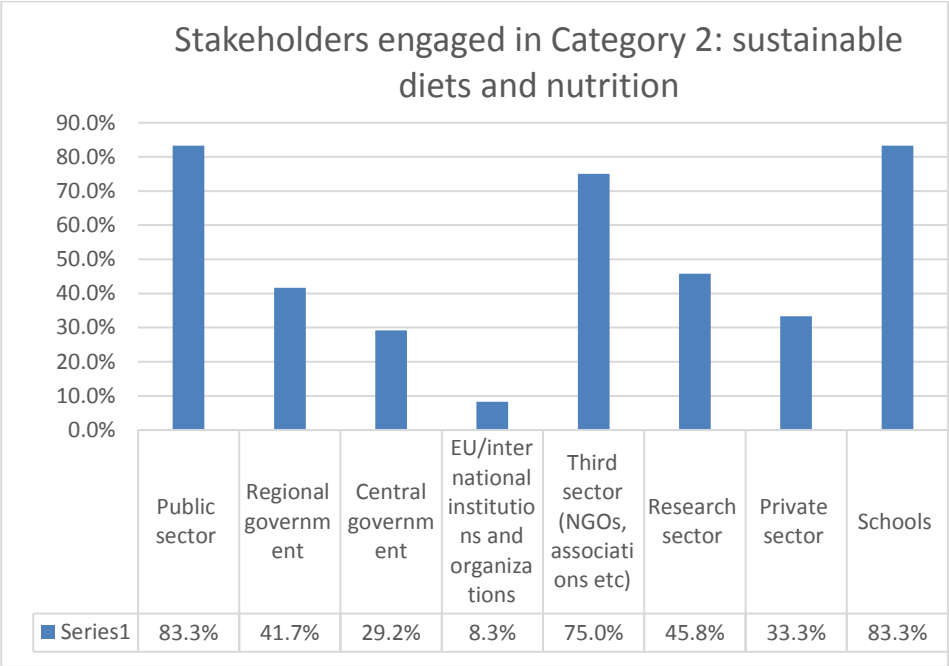


Figure 11 Types of actors involved in Category 2: sustainable diets and nutrition, on 24 respondents

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 9).

Table 9: Policy instruments used in Category 2: Sustainable diets and nutrition

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**

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 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.

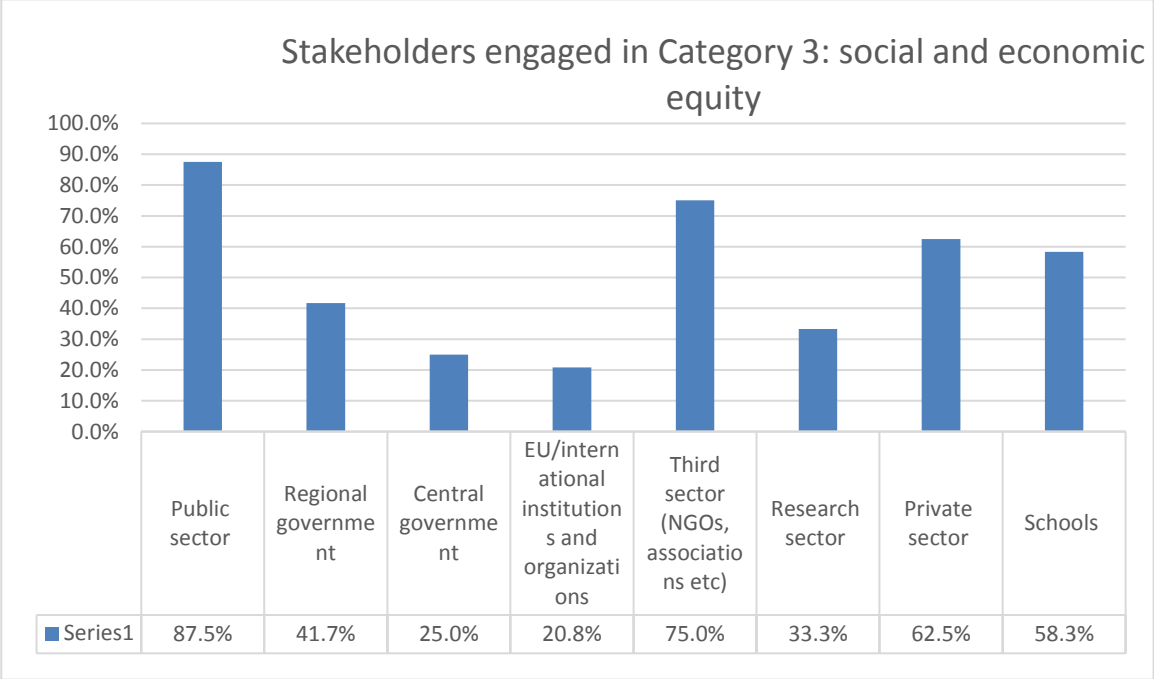


Figure 12 Type of actors involved in Category 3: social and economic equity, on 23 respondents

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 10).

Table 10 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)[15] 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" initiative. In 2007, Toronto assisted in forming a not-for-profit organisation called the Toronto Food Business Incubator (TFBI) with the primary purpose of providing start-up 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[16].

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 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).

[15] http://www.conquito.org.ec/

[16] https://www.theguardian.com/society/2017/apr/24/school-holidays-leave-3-million-children-at-risk-of-hunger-report-says

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[17], seen as a unique way to promote public health and wellbeing and improve local food security. Antanarivo[18], Mexico City[19], Toronto[20], Ljubljana[21], and Lyon[22] 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.

---

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

[18] Programme d'Appui à l'Agro-Sylviculture autour d'Antananarivo

[19] Small-Scale Sustainable Agriculture Programme for Mexico City

[20] Toronto Agricultural Programme, Toronto Urban Growers (TUG)

[21] Strategy for Rural Development of the Municipality of Ljubljana in the 2014-2020 Programming Period

[22] PSADER PENAP / Metropolitan Agriculture Policy Lyon

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).

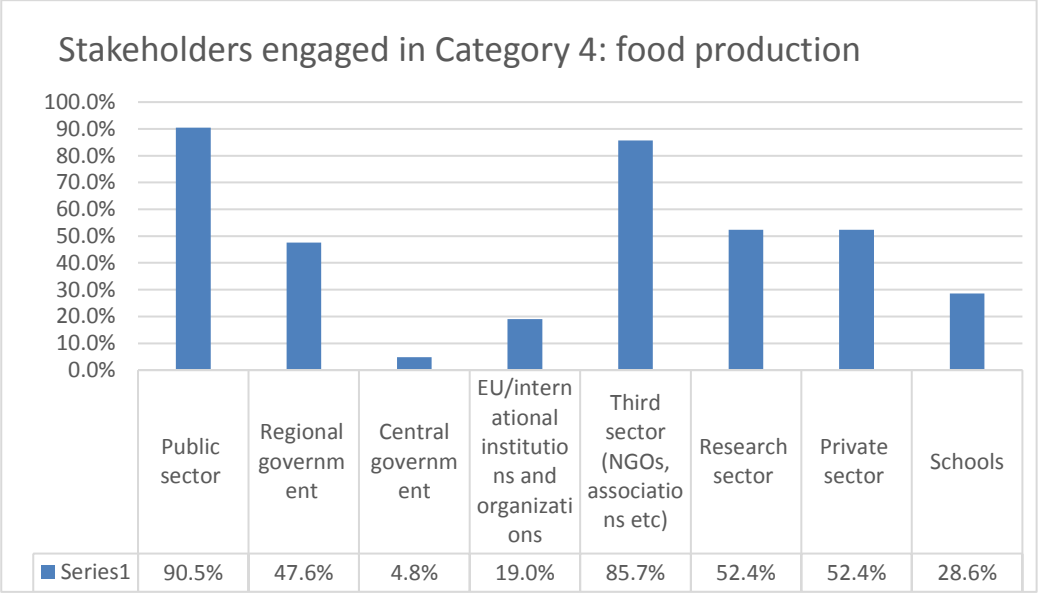


Figure 13 Types of actors involved in Category 4: food production, on 22 respondents

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 11.

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 11 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[23]' 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[24]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.

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.

[23] http://www.rabotsite.be/en

[24] http://oppla.eu/nbs/case-studies

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[25] 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[26]. The activities of the JP LPT d.o.o. company include the hiring of marketplaces, their management or maintenance, and cleaning.

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.

[25] http://ajuntament.barcelona.cat/mercats/en

[26] http://www.lpt.si/en/

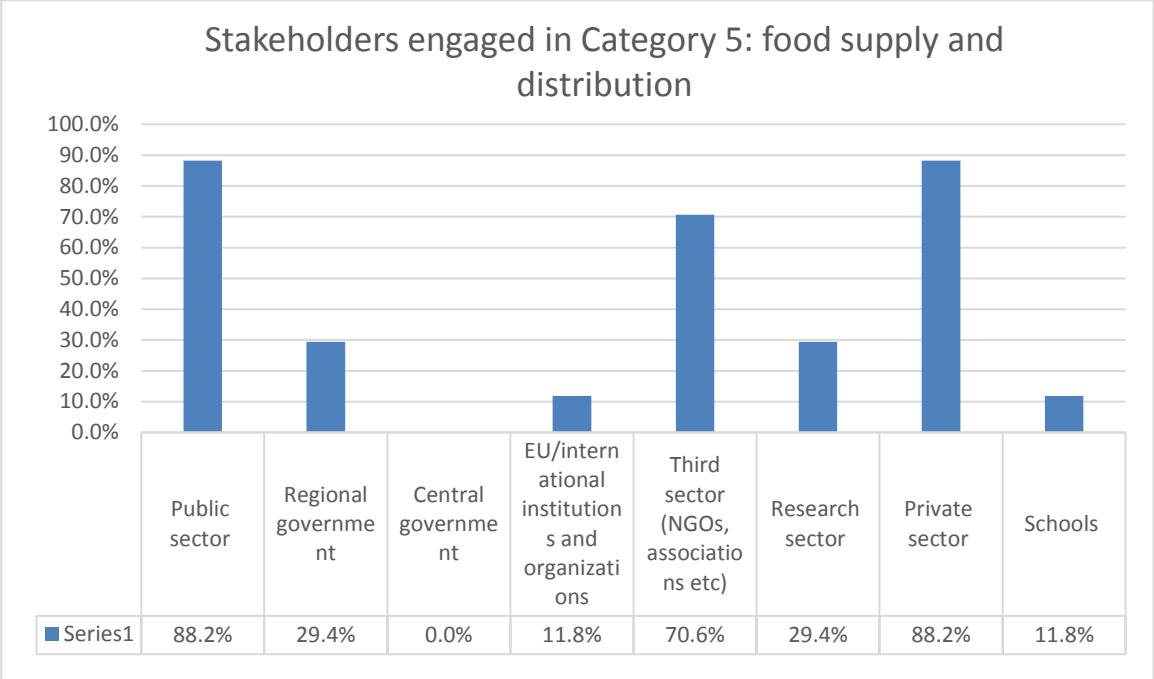


Figure 14 Types of actors involved in Category 5: food supply and distribution, on 16 respondents

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 12).

Table 12 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 m²). 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[27] had started thanks to the city's involvement in the URBACT project URBACT Markets[28], 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[29].

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 the "Lyon Fair and Sustainable City Label"[30], also a result of the city's involvement in another URBACT project ('Sustainable Food in Urban Communities).

Toronto supports the Food Reach[31] 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).

---

[27] http://urbact.eu/sites/default/files/torino_lap_eng_24122014.pdf

[28] http://urbact.eu/urbact-markets

[29] http://www.comune.modena.it/salastampa/archivio-comunicati-stampa/2013/7/mercati-agricoli-a-km-zero-2013-il-dibattito-in-consiglio

[30] http://www.sustainable-everyday-project.net/urbact-sustainable-food/tag/lyon-fair-and-sustainable-city/

[31] http://foodreach.ca/

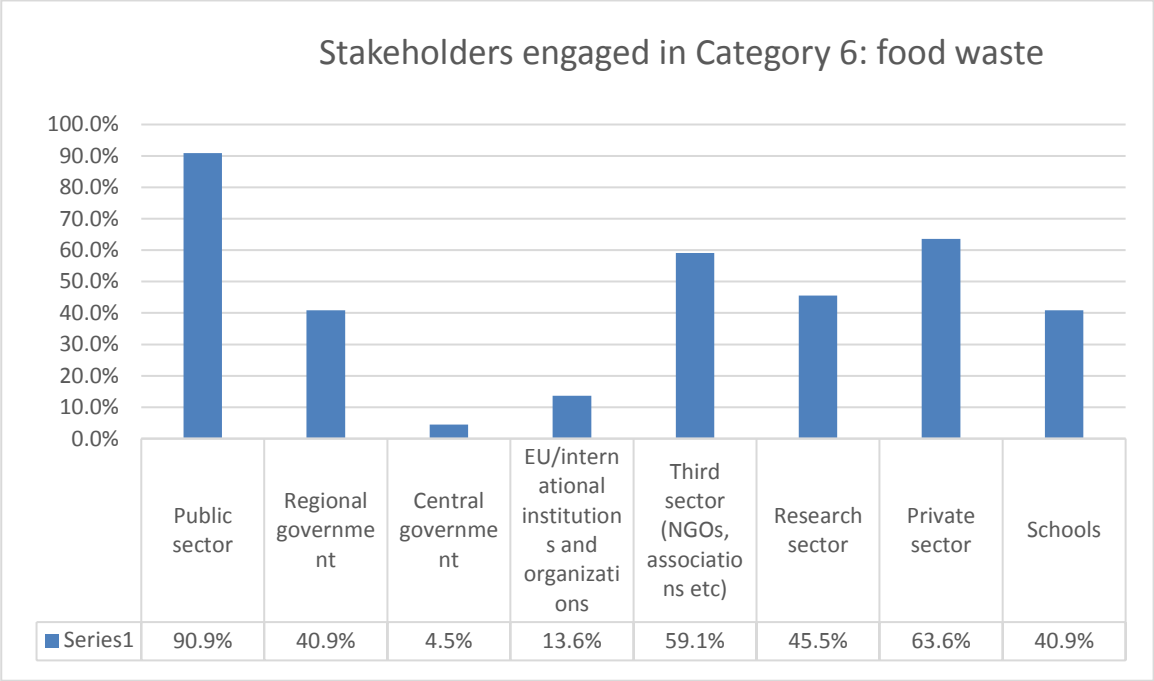


Figure 15 Types of actors involved in Category 6: food waste, on 24 respondents

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[32] region and with the national government through the H2020 REFRESH[33] platform. The REFRESH pilot working platform, financed 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[34] 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'[35]. Visitors to various city events receive a food container, which enable them to take what they cannot eat at a restaurant with them.

Table 13 provides an overview of the policy instruments used by cities when working on food waste.

[32] http://cor.europa.eu/en/events/Documents/NAT/Food%20waste%20prevention%20in%20Catalonia.pdf

[33] http://eu-refresh.org/national-platforms/spain

[34] http://www.snaga.si/en

[35] https://www.youtube.com/watch?v=V2p2AwcBTnQ;%20Tedx:%20https://www.youtube.com/watch?v=w0uS9U9WHSo

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

Table 13 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.

An example Milan's "Myfoody[36]" 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"[37]. FLAVR.be[38], 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"[39]. 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.

[36] https://myfoody.it/

[37] http://www.avanzipopolo.it

[38] https://flavr.be/

[39] http://www.jornada.unam.mx/ultimas/2017/02/16/expide-mancera-leyes-de-donacion-altruista-de-alimentos

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.

ANNEX 2 CASE STUDIES

ROTTERDAM: A STRONG FOCUS ON ECONOMIC DEVELOPMENT

Executive summary

Rotterdam has become well-known for its very strong approach to local economic development and support for jobs and skills creation. The metropolitan area has identified food activities as one of their three main economic priorities, generating an average of 27 billion euros per year. Collaboration with universities and companies is the main feature of the Food Cluster, a new governance model for the city, which uses the triple helix model. The metropolitan area has been a case study in two FP7 funded projects; SUPURBFOOD and FOODMETRES. A full use of project results in the city was hampered by the change in political priorities. However, collaboration with researchers and their projects has supported the initial development of the Food Cluster. The university is still using project results, even after the end of the project, in their work with local authorities. The case study is exemplary in understanding how a change in political priorities can undermine the full use of project results in cities.

The Netherlands is the world's second largest exporter of agricultural products and is leading the way in innovative food technology and logistics. Rotterdam is home to the biggest port in Europe, which is also among the ten biggest ports in the world. It is a key logistical hub for the food sector of the Netherlands. Food related activity in the metropolitan area (which also includes The Hague), employs circa 15% of the working population and provides an average of 27 billion euros in turnover every year. It is therefore easy to understand how the city requires a strong strategy to best drive this enormous potential for economic development.

The local elections of 2014 changed the political climate at the municipal level, towards a more economic approach: food activities were defined as the third most important economic activity in Rotterdam (next to the port and medical sciences). Responsibilities over food related activities were moved from the department for urban planning (which was responsible for short food supply chains and urban agriculture), which merged with the municipal economic development department and with the civil works department. The newly created department takes a more systemic interest in the food industry but from an economic development perspective. This determined a shift in the use of local funds, from activities such as urban agriculture, and had an impact on the relevance of the local food council. The Food Council of Rotterdam consists of researchers, small and large local businesses, agricultural representatives, local government, and those responsible for education who exchange ideas about food activities for the city[40].

In 2010, a similar approach took place at the national level where the Ministry of Agriculture, Nature Management and Fisheries (LNV) was merged with the Ministry of Economic Affairs. Recently, the work of the Dutch city regarding food has also been supported by the "City Deal", a new governance system initiated in the Netherlands during the National Food Summit of 26 January 2017. Through the City Deal 'Food on the Urban Agenda', 12 counsellors and Mayors, the deputy of the Province of Gelderland and three Ministers have started to collaborate to build an integrated food strategy for the Netherlands.

Officers from Rotterdam estimated that around forty people in the metropolitan area are currently working on themes related to food, even if the biggest share is taken by the number of staff engaged in the Rotterdam Food Cluster, led by the economic development department.

[40] https://www.rotterdam.nl/wonen-leven/regionale-food-council/

The Rotterdam Food Cluster

The development of the Food Cluster was triggered by a competition that Rotterdam entered to become a host of the World Food Centre. Although Rotterdam didn't win the competition, the network of companies that was mobilised to put forward the bid continued to meet, laying the foundations of the Food Cluster approach. The local government started talking with companies, and conducted interviews and visits to understand how the city could facilitate their business models development.

Today the Food Cluster initiative is composed of local government representatives, more than 6,000 companies and education and knowledge institutions collaborating to boost investment in the local sectors. The approach follows a triple helix cooperation where companies, education centres and the government collaborate (Figure 16).

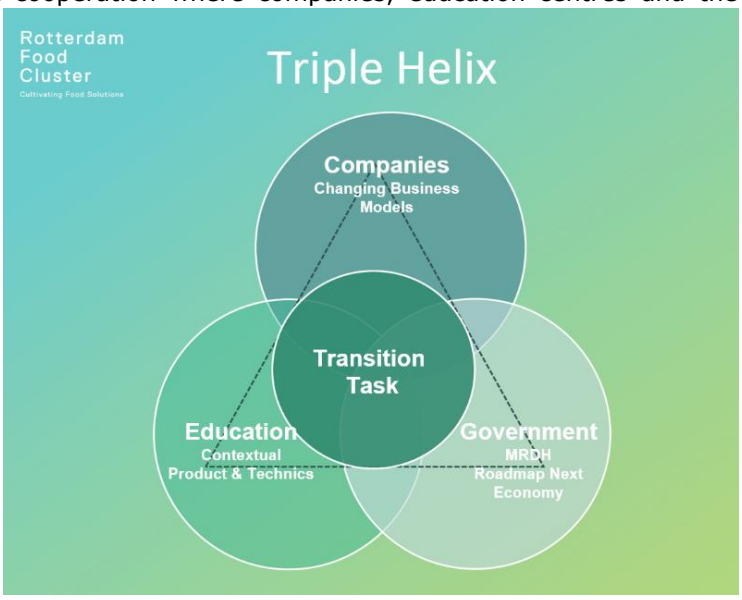


Figure 16 The Rotterdam triple helix approach

The work is led by a team of researchers (Wageningen University researchers among them) working on the "transition task", working towards creating business models for a highly-advanced level of automation and digitisation of the food sector. The Rotterdam Food Cluster[41] follows the strategy indicated in the "Roadmap for the next economy"[42], a blueprint for the development of the regional economy for the metropolitan area of Rotterdam-The Hague, which was developed in November 2016, based on the ideas of Jeremy Rifkin and the "Third industrial revolution" concepts.

The Food Cluster is currently working on three key projects: "Food for the Future", "World Food Park" and the "Feeding the City" initiative.

Today, Rotterdam hosts the World Food Parc one of the most important developments in the Rotterdam Greenport area, where 100 hectares on the south side of Rotterdam are dedicated to the food business park. Already boasting a turnover of over 5 billion euros, and supplying retailers all over Europe, the park – which is also located close to Europe's largest port - is already the most dominant Agro-logistical park in the Netherlands.

Figure 17 Rotterdam port and World Food Parc

The Food Cluster is working on five complementary projects:

1) Smart Logistics System: for cost and sustainability reasons, it is intended to keep the number of transport movements as low as possible. The availability of a Smart Grid network facilitates a Smart Logistics system specifically created for perishables which require different transport conditions.

[41] https://www.rotterdamfoodcluster.com/?lang=en

[42] https://mrdh.nl/system/files/projectbestanden/engels/Roadmap%20Next%20Economy%20in%20brief.pdf

2) Human Capital Pool: to guarantee flexibility, availability and knowledge building, an employment pool will be developed and maintained by the collective of businesses.

3) Valorisation of all waste flows: the objective is not only to develop a circular flow system but to make those flows part of a feasible business model.

4) Production of sustainable energy: the companies will be shareholders in their own sustainable energy company, generating, using and selling energy from all possible sustainable energy suppliers.

5) Centre of Expertise: a centre for information and education activities.

Overview of the EU funded projects

SUPURBFOOD and FOODMETERS were two FP7 funded projects, both coordinated by Wageningen University and both running between October 2012 to September 2015. In both projects, the Rotterdam metropolitan area was used as a case study.

SUPURBFOOD - towards sustainable modes of urban and peri-urban food provisioning - focused on short supply chains as a means to reduce the environmental impact of the agro-food system. Research was carried out in seven European city-regions (Rotterdam (NL), Rome (IT), Ghent (BE), Vigo (ES), Bristol (UK), Zürich (CH) and Riga (LV) in collaboration with a diverse group of SMEs, in order to identify innovative models of urban and peri-urban food provisioning taking into consideration nutrient, water and waste management, and multifunctional use of urban and peri-urban space. The project also aimed to establish links between researchers, policymakers and SMEs through a process of dialogue, sharing of experiences, exchange of best practice and joint learning.

The project was able to establish multidisciplinary networks in the metropolitan areas to improve sustainable urban food planning and support the invention and implementation of relevant strategies.

The area between Rotterdam and The Hague includes open field and greenhouse vegetable growing, fish farming (aquaponics), mushroom growing, and others. It was, therefore, a great case study for the FOODMETRES - Food Planning and Innovation for Sustainable Metropolitan Regions – project. The project aimed to assess both the environmental and the socioeconomic impacts of food chains with regards to the spatial, logistical and resource dimensions of growing food, as well as food planning and governance. FOODMETRES was designed to combine quantitative and evidence-based research principles with qualitative and discursive methods to address the wider dimensions of food chains around metropolitan agro-systems.

FOODMETRES[43] has developed a series of decision support tools allowing stakeholders from urban and peri-urban agriculture, food business, governance and civil society to enter a knowledge-driven debate on how to optimise the regional food supply of metropolitan areas around cities. One of the project's novel contributions is to enable the visualisation of metropolitan supply and demand scenarios through interactive mapping tools, which help stakeholders to better understand the possibilities for increasing metropolitan food sufficiency.

Impact of the Research and Innovation projects

When city officials from the Rotterdam Food Cluster were asked about the projects and their impact there seemed to be little awareness about them, or the solutions and added value they had brought to the Rotterdam metropolitan area.

However, it should be mentioned that the projects had mainly interacted with officials from the department of urban planning, which was, in the meantime, integrated to the department of economics, once the food priorities for the city had shifted from short supply chains to rather a strong focus on economic development. It should also be noted that it is often difficult for local authorities to see the connection between their collaboration with researchers and universities and their role in EU projects.

Officers from Rotterdam did mention a strong collaboration, which still continues, with the University of Wageningen, in order to set up the Food Cluster programme. The FOODMETRES project was also present during the Food Cluster start-up meeting in 2014 and during Milan World Expo 2015. Researchers and

[43] http://cordis.europa.eu/result/rcn/181749_en.html

officers also collaborated to the development of a short publication called "Food cluster Rotterdam: a living lab for developing a metropolitan bio economy"[44], as part of the FOODMETRES project.

The SUPURBFOOD project organised regional workshops, including one with the deputy mayor, where he acknowledged the relevance of urban agriculture initiatives. A stakeholder dialogue was also organised in cooperation with the City of Rotterdam and the Food Cluster team. The first part of the meeting was a presentation on the SUPURBFOOD project findings per work package and a discussion on the lessons learned. The second part of the meeting was a brainstorm on how to translate the Rotterdam experience into a possible entry for the World Expo in Milan 2015.

However, the strategy of the Food Cluster finally moved towards other types of priorities: the "Next Economy" agenda and the "Food for the Future" agenda. New priorities had emerged which required new research and data that were sought by ad hoc research tenders, financed by the municipality.

When interviewing the researchers from Wageningen university, they both mentioned that research dominated projects find it difficult to get the attention of the public. For example, in SUPURBFOOD different companies and SMEs were project partners and a few cities were supported with some travel budget, but the collaboration between the PhD researchers and those parties was often problematic, as the research and practical needs of those involved did not often coincide.

In Rotterdam, the role of the SUPURBFOOD project was to follow different local meetings, in particular, those of the food council, in order to advise on its activities. In addition, it sought to collaborate and create synergies between different type of actors, mainly farmers and citizens. The input provided by the researchers involved in the project probably created a lot of impact for those meetings, but from the perspective of the public the link with the project, and especially the EU ownership of the project, is not always clear.

Researchers also mentioned that it is difficult for a project of three years to create a strong impact at the local level, as the changes required often need local stakeholders to get involved and for local dynamics to develop, which takes time. It is mainly thanks to the continuous collaboration of different local actors with the research centres that allow EU projects to develop further impact at the local level.

After the end of the SUPURBFOOD project, the connections that it created became enablers for the CITY-COUNTRY master class[45], one of the activities of the Food cluster, performed in collaboration with Wageningen University. Through a matchmaking programme, they help farmers and growers from the region to develop innovative business ideas and learn how to attune their products and services to the needs of the end consumer and increase their sales in the city.

It is also important to note how project results can continue beyond the duration of the project itself and outside of its "borders". The Smart Food System Design (SFSD) is a legacy of the FOODMETRES project, which is now working in Amsterdam and Almere thanks to the cities' collaboration with Wageningen University. SFSD seeks to develop design proposals for integrated, sustainable and innovative food systems linking up metropolitan (city-region) with inner- and peri-urban environments. Building upon the principles of resource efficiency, circular economy, knowledge brokerage and inclusive forms of governance, the overall goal is to depict the associated technical, procedural and strategic services for a better understanding of both economic and public stakeholders interested - or already engaged - in Smart Food Systems at the level of urban areas and metropolitan regions. The guiding principles of the sustainable design combine (1) Metropolitan Foodscape Planning tool developed under the EU project FOODMETRES to identify potential regional food supply areas, (2) the methods of Landscape Character Assessment (LCA) asking stakeholders to share their vision of a place, and (3) the methodologies of system analysis addressing flows of things (resources, goods, people) between metropolitan locations, focussing on quantitative aspects of the food systems.

In the future, it has been advised to have projects which include all the different segments of society with a specific budget and role assigned to them. This should enable stronger collaborations of the different actors towards the project objectives, which is fundamental for food related activities.

---

[44] http://fooddashboard.nl/publicaties/food-cluster-rotterdam/

[45] https://www.rotterdamfoodcluster.com/project/city-country-masterclass/?lang=en

Budget dedicated to food activities in Rotterdam

As for the other cases of this deliverable, the city officials had experienced some issues in retrieving data related to the budget that the city is investing in food related actions. The budget is divided among too many departments and different city portfolios, and so it is difficult to have a complete overview.

The budget for the Rotterdam Food Cluster is about 750,000 euros per year. It is financed by the department of economics, through local resources.

The budget is used for the many Food Cluster projects and excludes the internal cost for personal and office expenses. The budget is mainly used for research tenders, project management, developing projects, and for co-financing new initiatives that fit the ambition for the "Next Economy" roadmap.

Figure 18 the Rotterdam market hall

Officers also mentioned that the relatively few ERDFs in Rotterdam are mainly dedicated to the promotion of start-ups and SMEs. One project related to food in the metropolitan areas, which was financed through ERDF money, is BLUECITY[46]: an old water park which has been converted into a research cluster, where new circular economy solutions are tested, among which some are related to food.

For the development of this case study the following people were interviewed:

- Nick van den Berg, Department of Economics, Rotterdam
- Sharon Janmaat-Bouw, Department of Economics, Rotterdam
- Amelia Oei, Department of Economics, Rotterdam
- Dr. Jan Willem van der Schans, WUR (University of Wageningen)
- Dr. Dirk Wascher, WUR (University of Wageningen)

It should be mentioned that it was not possible to interview the city officers from the urban planning department that had more actively been involved in the FOODMETRES and SUPURBFOOD projects.

[46] http://www.bluecity.nl/

LJUBLJANA: AN ATTENTION TO RURAL DEVELOPMENT AND URBAN GARDENS

Executive summary

Two thirds of the Municipality of Ljubljana's (MOL) land is agricultural. For this reason, its "Strategy for Rural Development 2014-2020", although not a food strategy per se, is quite comprehensive. The empowerment of rural areas is also pursued from a socio-cultural perspective, beside the economic and political implications of targeting self-sufficiency in food. To a certain extent, the special attention given by politicians to the environmental issues have delayed the city officials' focus on food. Accordingly, the administration, not having been directly involved in the project, overlooked the FOODMETRES, an FP7 project, research results – which identify a shorter food supply chain as a possible solution to the productive deficit of the MOL, and could have potentially provided the city with the "recipe" for food independence. The success of GREENSURGE, another FP7 project, on the contrary, started with the vice-major's personal commitment and the provision of a public site for the realisation of green infrastructures. After a first phase of field research, a large partnership among the MOL, universities and SMEs was set up, and then completed with the involvement of an NGO. While the contribution of urban gardening to social inclusion was given greater resonance by city officials, the research introduced new concepts from sustainability jargon into the Strategy – e.g. ecosystem services, participation in planning and governance.

While the city does not have a "food strategy" per se, the Municipality of Ljubljana (MOL) has approved a "Strategy for Rural Development 2014-2020". The City Administration established the strategy as a prompt response to the new EU guidelines on rural development, addressing the same programming period. They are also in line with the national strategy for rural and agricultural development and the idea of a "green Slovenia" (Ljubljana was nominated European Green Capital of the EU in 2016).

The focus of the strategy on agriculture and food production is reflected in three strategic goals. According to the first one, the Strategy aims at increasing MOL self-sufficiency in food, promoting organic and integrated agriculture. Hence, the local dimension is at the heart of the plan for rural development, crucial for the city's ambition to ensure enough quality food to pursue a "healthy" and improved food self-sufficiency.

The second goal relates to the empowerment of rural areas, and it wants them more accessible to outside actors and connected with urban areas, allowing for urban-rural linkages. An *integrated approach to the marketing of rural areas' goods*, could bear fruit, in terms of both more visibility and improved integration of primary sector activities with the other components of the food system, including urban areas.

Figure 19 Overview of Ljubljana's countryside

The third and final goal targets the development of the social capital and the preservation of the municipality's rural identity, as two-thirds of their land is classified as agricultural. Therefore, Ljubljana's determination to place local products on its citizens' tables can be attributed to a broader political project for generating employment and improving the conditions of the farmers. The opening of a farmers' food shop in the city, for instance, both creates new jobs and strengthens agricultural holdings.[47]

[47] (M. Markovčič, personal communication, May 19, 2017)

This holistic perspective is pursued through two operational objectives: improving the supply of high-quality fruit and vegetables while ensuring that production methods remain respectful to the environment and ecosystems. These objectives imply the active involvement of the MOL from the very beginning, in the shaping of a favourable legislation and in connecting the various stakeholders.

The Strategy goes beyond the traditional view that food is not among the competences of a city, mainly because it is produced outside of city limits. On the contrary, the strategy's holistic approach to rural development asks the MOL to lead the change, always having in mind the improvement of the quality of life and environmental protection.

The Department for Environmental Protection coordinated several initiatives aimed at constructing shorter, greener and more visible food supply chains. The programmes arise from concrete problems experienced by food producers, and by their attempts to resolve them. The new business models that have emerged set a paradigm for rural development.

The identification of the local empowerment as a policy goal in the Strategy goes even further, and a special concern is devoted to the "enfranchisement" of the vulnerable of the society – women and youth, in particular. The MOL established appropriate training programs for them in the field – literally! – that often become networking opportunities, eventually leading to new cooperation and co-financing of work programmes (often participated by the MOL itself). In doing so, the Strategy supports quite a cultural change given that, in many cases, women and young people do not consider entrepreneurship as a viable option.

While the MOL is emerging as the main actor of food system innovation, benefiting from the cooperation of different departments – Environmental Protection, Real Estate, Culture and Youth – it also takes advantage of the strong partnership with other players. The Chamber of Agriculture and Forestry of Slovenia, the Regional Development Agency and a large group of territorial professional associations (fruit growers, gardeners, beekeepers, etc.) joined forces for the success of the Strategy.

The MOL also enhances the translocal dimension of the food related issues. An informal group of co-workers within the Department of Environmental Protection is working on many activities within the MUFPP Framework for Action –Ljubljana is, in fact, one of the MUFPP signatory cities, and is a very active partner: three of the City's good practices regarding food were admitted to the opening edition of the Milan Pact Awards.

Many of the results delivered are very tangible in nature: ranging from local products' vending machines to a public gardens system enabling citizens to become the producers of their own food, to the trademark "Ljubljana basket" for food locally produced and locally sold. Others were part of very comprehensive projects which fall within the various MUFPP categories. Besides the Strategy for Rural Development, the Municipality established public municipal markets and engaged itself in a public campaign against food waste ("Raise Your Voice Against Food Waste"), bringing together a range of different actors (the so-called "Third Sector", Universities, international organisations, etc.) around a few simple actions (for instance, not throwing leftovers away). The interplay between the national and local level has produced a series of schemes for fruits and vegetables in schools (promoting sustainable diets and nutrition).

All of this is included in a broader knowledge exchange programme: the MOL cooperates with the Regional Development Agency to provide food self-sufficiency to the Ljubljana Urban Region and exchanges best practices with the neighbouring municipalities. Thus, a network is already there "on the line" and it could become an excellent starting point for joint projects making the most of the EU funding.

It is interesting to note that the Strategy refers to the methods of production, acknowledging the environmental challenges the world is facing nowadays. In particular, global warming is addressed through the introduction of more resistant fruit and vegetable varieties and the monitoring– if not elimination – of the use of pesticides.

By setting ambitious targets, the MOL is aware that the changes will not bring to fruition overnight and recognises the need for long-term planning, closely monitored, year after year. The place of researchers from specialised centres and universities is "in the field", on the testing ground, where they are ready to support the cities with useful (and up-to-date) information. Yet, the latter is not always fully exploited, as we will see below. This could limit the difficulties that may arise with the change of political majorities and the questioning of previous decisions which are likely to occur over time.

In the case of Slovenia, national government and local government play complementarily towards a more comprehensive approach to food policy. The "old" Slovenian Food and Nutrition Action Plan 2005-2010 (FNAP) was based on three pillars: food safety, balanced and protective nutrition and a sustainable food

supply. While the actions taken in the first and third category delivered quite satisfactory results, the five-years period was too short to make major changes in dietary behaviour. Moreover, the chosen indicators constructed the categories as silos: at the same time, food safety scored "substantial" and the offer of healthy food safety was rated "minimal". For this reason, a new and all-encompassing national strategy on Food, Nutrition & Physical Activity (FN&PA) was developed for the period 2015-2025. A special attention (and a whole chapter) was dedicated to the health sector. In fact, the access of all citizens to healthy eating got included in the programme's mission, and it was pursued by reshaping the most common diets, introducing fruits and vegetables and stressing the importance of breakfast. The intention to enhance coordination and cooperation among different departments, to reach real policy synergies, was also shown in targeting the objective to reversing the trends in children's obesity and elderly's incapability. The strategy was integrated with other complementary projects - for instance, "Together for Health", a very comprehensive primary health care intervention – and goals (Ljubljana was the European Green Capital in 2016).

Overview of the EU funded projects

Research first – but not solely. This best summarises the rationale behind the implementation of the FOODMETRES[48] in Ljubljana. As for the Milan and Rotterdam cases, the *mission* of the project – "Food Planning and Innovation for Sustainable Metropolitan Regions" – is to understand how to feed today's larger and most populous cities. The study indicates that a shorter food supply chain could be a possible solution to the productive deficit of the MOL (which has just 25% food self-sufficiency), the highest in the whole Ljubljana Urban Region (LUR). By some calculations, the Municipality will be able to achieve up to 50% self-sufficiency, if the potentials are fully exploited. That is if the political will is in place to do so.

The FOODMETRES research results – integrated with a Sustainability Impact Assessment conducted in cooperation with project partners from Berlin – suggest that the most necessary innovation for the city-region food system concerns urban gardening and family farming. Nonetheless, the intuitions of the producers often need the support of the City Administration as far as elaborated health regulations and specific marketing skills are also considered. The milk vending machines, established by the MOL based on farmers' inputs represent a successful case study.

Furthermore, FOODMETRES researchers from the University of Ljubljana insisted that it could be a good thing for the city to read their report. Still, after some initiatives and attempts, such as the local markets in the Landscape Park of Ljubljana, they were not able to establish the same relationships with local policymakers (not involved from the beginning) or the same long-term cooperation as they have with local producers. However, the relations with the city administration are essential in order to make use of the project's results – which potentially provide the city with the "recipe" for food independence – even after the end of the FP7 funding.

The success of the GREENSURGE project regarding green infrastructure (GI) – also started in the framework of the FP7 funding programme – it provides evidence that the personal commitment of the Vice-Mayor (and the Mayor's signature) can make a concrete difference.

While being a research project, the University of Ljubljana involved the Municipality through its Vice-Mayor. The Municipality made a site available (the Livada site) for the realisation of the project as a "living lab", which promised to tackle two enduring problems of the city: the existence of large green areas which have very high maintenance costs and eventually run at a loss, and the need for research on how to best use urban green infrastructure and eventually connecting the GI with urban food production and providing a social value.

Figure 20 Urban gardens in Ljubljana

[48] "FOODMETRES – Food Planning and Innovation for Sustainable Metropolitan Regions" at http://www.foodmetres-kp.eu/

From the sum of the two problems, GREENSURGE in Ljubljana found out a solution. After the research phase, a partnership between Universities, the municipality and private stakeholders has been set up. The municipality provided a green site (the Livada site) and the private partners were involved in the project providing expert support, construction material (forestry equipment), and its transportation. The University was responsible for experimenting with a new participatory governance system of the Livada site. The University took a further step by bringing in the NGO Zavod Bob as an unofficial partner: thanks to their cooperation, a heterogeneous group of 15 young people was formed, made up by school dropouts and actual students. This group was responsible, under the guidance of the University, to design and implement a participatory planning of the site and it was turned into a public urban garden for food production and leisure. The project, therefore, also provided the opportunity to explore the contribution of urban gardening in relation to social inclusion. The MOL favoured this idea and is currently seeking a way to replicate the project in other sites.

Impact of the Research and Innovation projects

From a city's point of view, the FOODMETERS project was a semi-success: it provided the city with copious data, which the city could have used to back up its Strategy of Rural Development. On the other hand, there was insufficient involvement on the part of the city in the project, which therefore contributed in a very limited way to the overall food initiatives in the city. It must also be said that the purpose of the programme was for the Commission (funded through DG RTD) to *comprehend* such data, not really for the city to do a concrete use of the data. According to the FOODMETERS researchers, at the time of the project, city officials were more focused on dealing with issues such as rising traffic congestion and urban green spaces (Ljubljana was working to be elected as European Green Capital in 2016). The shift towards food only occurred later. Once again, having to deal with the fluctuations in the political will of local administration impeded the sustainability of the project. The timing of EU funded projects magnifies this risk: an extension of the average duration to five years could reduce the effect of a change in the political majority while helping the interaction between the researchers and the city.

The GREENSURGE[49] project was different in this regard as researchers had involved the MOL through the Vice-Mayor. This partnership allowed proper research inputs as well as addressing the needs of the city.

Its impact was not limited to a theoretical framework where other players would take action; rather, it brought concrete results. Among these, there are enhancements in terms of food production in the city, produced in the community gardens by youngsters (the quantity is rather limited but its educational impact is quite impressive) and the experimentation of a new participatory planning process of the Livada site by young people, thus empowering social inclusion. Remarkably, one of the young people involved in the project is a dropout from school and has recently enrolled again. This girl, having participated in the planning of the site, its maintenance and in the gardening activities, chose to return to education, and has enrolled in an environmental protection school. The project, thus, is definitely in line with Ljubljana's aspiration to improve food self-sufficiency and urban agriculture, while involving vulnerable segments of the population.

The research results eventually matched the political will of the city's government: the success of the project in engaging the general public was a great help. City officials were involved from the beginning, allowing researchers and city officials to join-up their needs and aspirations. While its social impact was given greater resonance by the city officials, the research introduced new concepts from sustainability jargon into the city's development strategy. For instance, "ecosystem services" (i.e. the benefits human kind receives from all kinds of ecosystems) and "participation in planning and governance". The GREENSURGE researchers credited EU funding for having given the initiative a lot of credibility.

According to the city officials, the strengths of the programme were based on the fieldwork of the researchers – which should be further encouraged and appraised by EU calls – and a strong network inside the Municipality connecting those who are involved in the food chain. The biggest limitation, instead, was time. In this case, the request is for more years, not less than five, for research results to "stick" to the political practices of a City.

In the end, Ljubljana made a case for the cities to lead the innovation of the food system. While one may be a leader, this does not imply that they are a one-man band. The GREENSURGE project demonstrated

[49] "GREENSURGE – Urban Green Infrastructure – Connecting People and Nature for Sustainable Cities" at http://greensurge.eu/

that both social and urban needs – as well as its long term strategic position on development - can be harmonised, and enhanced, by making use of the research findings. Large partnerships at the local level provide a platform for the projects, sharing the common goal or having a universal *mission*. Such factors will be favoured if EU fundings for R&I are further aligned with other EU funding streams. Such a configuration would also foster the interplay between local, national and international actors, having a multiplier effect on the project outcomes through knowledge exchange. The satisfaction of the cities' additional needs, in terms of longer programs for stronger political support, is behind the success of the projects.

Budget dedicated to food activities in Ljubljana

As already mentioned, the City does not have a *food* strategy per se, but food related issues are taken into account in the comprehensive Strategy for Rural Development 2014-2020. For the year 2017, 145,700 euros have been allocated to Rural Development, while 32,000 euros are state-aid for knowledge transfer and information actions. Overall, the 2017 budget scheme accounts for 310,700 euros, and it is a combination of funds coming partly from the EU programmes and state initiatives, but mostly from Ljubljana's city budget itself. Within the Municipality, apart from the Department of Environmental Protection, the Department for Pre-school Learning and Education (meals in kindergartens) and the one for Health and Social Security (lunches for pupils and elderly people in public canteens) dedicate part of their budget to food.

For this case study the following people were interviewed:

- Markovčič, High Adviser for Rural Development, Dept. for Environmental Protection, Section for Rural Development
- Goradz Maslo, Director of Dept. for Environmental Protection, Section for Rural Development
- Matjaž Glavan, Foodmetres, Case Study Leader, University of Ljubljana
- Rozalija Cvejić, Foodmetres, Case Study Leader, University of Ljubljana
- Marina Pintar, Foodmetres Researcher, University of Ljubljana

GOTHENBURG: ENVIRONMENTAL CONSIDERATIONS DRIVING A COMPREHENSIVE FOOD STRATEGY

Executive summary

Gothenburg, the second largest city in Sweden, has been working on food since 2009, because of a strong political push due to environmental concerns. The municipality developed many activities related to food, especially focusing on land-use, as the municipality owns about 55-60% of the land surrounding the city.

Gothenburg has been involved in different EU funded projects, such as the project RETHINK, under FP7. The project had an average impact, allowing university researchers and municipality officers to initially get in contact and to now work together on a future strategy. More recently, Gothenburg was involved, as a partner, in the project Eco Based Forestry, a Climate KIC project (under H2020). This project is having positive impacts in the work of the municipality, since the city of Gothenburg is involved in the project and intends to co-establish a business plan at the end of the year, focusing on public-private solutions and partnerships. Finally, Gothenburg was a partner in a URBACT project: Sustainable food in urban communities. This URBACT thematic network involved ten European cities wishing to grow, deliver and enjoy more sustainable food. The action plan developed in this framework, for the exchange of knowledge between cities was the main strength and impact of the project, allowing the city to develop food activities even further and provide feedback for the future strategy.

The city of Gothenburg does not have a food strategy yet, but it is a work in progress. The work is the result of a strong political push coming from the city's environment-related ambitions, as reported by Ulf Kamne, Deputy Mayor for urban planning and environment, and the policy officers working on this strategy. In 2012, the city of Gothenburg developed a political agenda for the environment, featuring goals that are connected to the Swedish national environmental objectives. In this agenda, 212 actions were decided and approved by the City Council in 2013. Many of these actions are related to food and will drive the environment policy of the city for the next 10 to 15 years. From here, the municipality began to develop a food strategy starting in December 2016. This strategy should be ready within the next two years.

Figure 21 overview of Gothenburg city hall

Gothenburg will be focusing on three main challenges:

- the environmental impact of the production and consumption of food
- health
- food security

The strategy will aim to tackle these challenges, and to support this work, five focus areas have been identified:

- food production,
- food consumption,
- food deliveries and logistics,
- resource efficiency nutrient circulation, and
- water for food.

One of the goals of Gothenburg's future strategy is to have a systemic and holistic approach to food, which would involve different city departments. For this purpose, several working groups made up of city officials, researchers, private companies or NGOs, were gathered to identify opportunities and obstacles. Put simply, the strategy will provide policy support to some of the work which is already taking place in the city. In the long-term, the ambition of the political level is to develop a 2030 food policy that will support the implementation of the strategy. There is a true political mission to increase the urban growing of food and available land use where people would be able to make a living from the lands. Sweden's second largest city wants to keep on promoting food related activities and go even further and faster.

The Real Estate department of the city, which manages the peri-urban land owned by the municipality, is already doing a great deal in term of food, and there is already a lot of food innovation taking place.

Innovative and diverse food activities

In comparison with other European cities, Gothenburg's work on food started quite early with local politicians beginning to seize the opportunity in 2009. The municipality of Gothenburg owns a lot of urban agricultural land, and most of it is not used. In the best cases, it is used for farming or leisure (such as horse riding).

Since 2009, the municipality has been trying to promote further land use for food-production "making it possible to take care of and develop urban agriculture and organic food-production"[50] and encourage citizens to grow their own food. This was quite new for the Real Estate department in charge of this assignment. One of the biggest challenges that this initiative has had to face is the changing the mindsets to accept that land must not always be used to build. Today, citizens can rent land off the municipality through long term contracts, and can then invest in "different kind of small scale urban farming"[51]. To start this process, they can also apply to get some financial support from the city to begin their activities.

After this political decision, the second push towards developing food activities came from the project '*Stadslandet*'. This rural-urban project is partly financed by the EU through the European Regional and Development Funds, partly financed by the city, and ran by the Business region Göteborg, the organisation responsible for business development for the city. The Real Estate department, in charge of managing the peri-urban land, is also involved in the project.

The project aims to develop a model for a broad urban development in the North East of the city, and to "*find out if the population can and want to help develop North-eastern Gothenburg to a green neighbourhood where rural and urban areas are combined*"[52]. The objectives are to identify several essential research questions, but also to undertake research-actions to investigate what can new models of collaboration and innovation for sustainable green development between the city and the country side look like and, in particular, how it is possible to streamline the connections between food producer and consumers[53]. Three main areas of work were identified:

- ecological;
- social;
- economic.

Different activities related to food have been developed within this project. Food actions and projects are strongly linked to the social and business agenda of the city, to reach benefits by overcoming the social differences in the city, "knowledge and social exchange, increasing the possibilities for employment" or "encouraging local production"[54].

---

[50] Sustainable food in urban communities, Final thematic report p. 26, see annexes

[51] *Ibid* p. 9

[52] *Ibid* p. 20

[53] Mistra Urban future, Rural Urban Gothenburg - Stadslandet https://www.youtube.com/watch?v=Al6n0k3PYpE

[54] Sustainable food in urban communities, *op. cit*. p. 21

This comes through different activities, for instance by the integration of foreigners through farming. The project allows the connection between young and skilled migrants willing to take over abandoned farms.

The '*Stadslandet*' project endorses close links between researchers and policy work within the city, but also close links between food activities and other urban activities, as social integration or health, and this is where it gets its strength.

The city of Gothenburg is also quite advanced concerning their work on sustainable diets and nutrition. The municipality set the ambitious goal to serve 50% of organic food in public canteens by 2018. The administration of Lundby, part of the city, is leading the way by already serving almost 50% organic food[55]. The municipality has already reached its goal to serve 100% organic meat. Similarly, the total amount of meat served decreased from 7% last year, as a result of awareness raising initiatives and the serving of vegetarian meals.

Several campaigns are also targeting citizens to take the opportunity to influence people's habits towards more sustainable food choices.

Finally, the municipality is quite committed to working with other stakeholders on food activities. For example, Gothenburg took part in activities organised by the local NGO Change Maker, a "change agency"[56] that developed several projects on food. Their latest project, Foodmaker[57], gathers a network of different actors working in the field of food: farmers, chefs, restaurants, food industries. The municipality came to one of the meetings and used this platform as a place to get new ideas and feedback on their work on the strategy. The city officers are willing to develop the strategy with a multi-stakeholder approach, so it can cover as wide a range as possible.

Overview of the EU funded projects

In addition to the *Stadslandet* project, promoted under the ERDF, Gothenburg has been involved in different projects: as a case study in the FP7 project RETHINK – Rethinking the link between farm modernisation, rural development and resilience in a world of increasing demands and finite resources, and as a full partner in the study financed under CLIMATE KIC (part of Horizon2020 budget). Gothenburg also made a lot of progress in its work on food thanks to the URBACT project "Sustainable food in urban communities".

RETHINK, farm modernisation and rural resilience, is an EU project, funded through RURAGRI, an ERA-NET[58] co-funded scheme supported by the European Commission under the FP7 research and innovation funding programme. The aim of the project is to *rethink the links between farm modernisation, rural development and resilience in a world of increasing demands and finite resources, and to explore the meaning of agricultural modernisation*. The project counted fourteen partners, mainly universities, and thus fourteen case studies (one by each partner). The University of Gothenburg was one of the partners, and the researchers Gunilla Olsson and Anders Wästfelt conducted a case study on Gothenburg, which was the main deliverable of the project and was of direct interest to the city. The project covered different themes such as farming, wine growing, and in the case of Gothenburg, peri-urban production. The four core themes of the project, knowledge and learning, governance, resilience, prosperity, cut across the fourteen case studies.

The case study on Gothenburg, "Peri-urban agricultural transformations in Gothenburg", focusses on the peri-urban land use owned by the municipality, and agricultural production. The case study tries to answer different research questions, such as knowing what kind of governance is needed for this peri-urban use, or how to involve other peri-urban municipalities. This report is available online in English and

[55] Creating Space for sustainable food systems in urban communities – practical approaches and examples for cities, URBACT handbook, p.47, http://bit.ly/2sYNSFd

[56] Website: http://changemaker.nu/about

[57] Website: http://foodmaker.se/

[58] The objective of the ERA-NET scheme is to develop and strengthen the coordination of national and regional research programmes.

in Swedish[59]. One outcome of the project is the establishment of an urban food network. The network has developed a research platform for urban food activities where different organisations, NGOs, researchers and city officers collaborate. The project *Stadslandet* is also part of this network. Most of this thinking will be involved in the drafting of the food strategy. During the life time of the project, the city was not involved in the research. It was only at the end of the project that the researchers handed the final report to the municipality, and when they realised that this work perfectly matched the concerns of the city. Since then, the researchers and the city officers have kept a good relationship and developed a will to work together, improving each other's work. It is obvious for the municipality that research is very important in supporting the policy work, and that a collaboration is only beneficial, as showcased through the *Stadslandet* project.

Climate KIC is one of three Knowledge and Innovation Communities (KICs) created in 2010 by the European Institute of Innovation and Technology (EIT). The EIT is an EU body whose mission is to create sustainable growth. Their project in Gothenburg focused on Agroforestry, one of the areas of work of the initiative. The Gothenburg based study "Climate smart eco-based agroforestry with green business models and social sustainability" is focusing on the growing urban demands for agriculture, urban and peri-urban farming and forestry produce and ecosystem values in a way that create green businesses.

The objective of the project is to link innovative models for ecosystem-based agroforestry as a key for new local strategies for sustainable interactive climate smart economic development. The project focuses on local production for the local market, to develop the local economy, social integration and development. Different and broad concepts are used, such as economic development, social security or integration. In a nutshell, this project aims to develop Gothenburg "as a test-bed for innovation for eco system based agroforestry"[60]. Other deliverables are being developed, including workshops, a conference on Agroforestry in November 2017, and a business plan that should also be ready by November 2017. The city is, of course, involved in the development of the business plan.

In this project, the researcher and the city have close relationships, which is partly because the city is involved in the project as a partner. From the interviews emerged the common belief that it is crucial that the city officials are involved for them to have an ownership of the project and therefore make use of the results. The project would not have worked without the city as a partner. The city and the researchers will continue to work together even after the project ends, for instance on the food strategy, that will be created using feedback from the researchers and from the project itself. Another outcome of the project is a deal made between local food producers and restaurants, ensuring restaurants buy directly from the producers.

From May 2012 to April 2015, Gothenburg was a partner in the project **Sustainable food in urban communities**, financed under the URBACT programme, which used ERDF budget. This URBACT thematic network involved ten European cities wishing to grow, deliver and enjoy more sustainable food. They were looking for joint, effective and sustainable solutions to develop low-carbon and resource-efficient urban food systems. The network focused on three themes:

- Growing: fruits and vegetables in the city, either in parks, gardens, on rooftops etc.
- Delivering: in a more sustainable way
- Enjoying: more sustainable food (like local products, seasonal food), products meeting environmental and sustainable criteria, preventing waste.

In this framework, each of the partner cities had to develop a local action plan[61] for sustainable food for the city, as a deliverable of the project, including ongoing and upcoming activities undertaken by the city. This project was helpful to learn more about the city and what activities are taking place, and the redaction of an action plan helped to push further and complete the work of the municipality, and is valuable in the development of the future strategy. Moreover, thanks to this project, cities get to work with each other, to discuss their common challenges and find solutions together thanks to knowledge sharing. The translocalism of this type of project is very much appreciated by cities.

---

[59] See online: http://bit.ly/2szFxbJ

[60] Climate smart eco-based agroforestry with green business models and social sustainability, Climate KIC report, p. 10

[61] Göteborgs lokala handlingsplan för Hållbar mat, in Swedish

Impact of the Research and Innovation projects

The RETHINK project, now that it is completed, is giving precious input to the work of Gothenburg. Efforts will be made to address the problems raised by the study in the future city strategy. The municipality generally recognises that research projects can, and should, give direct input into practical policy work. For instance, the draft food strategy for the city is given to researchers and other stakeholders such as farmers, NGOs, officials, and scientists for feedback in a co-creation way of working. Moreover, the local approach of the research is a key element for the success and sustainability of a project. For the municipal officers, it is essential for their work that some research on the local level and on the local conditions - research that they could not afford to make themselves - has been made. This way, the local food potential, the challenges, and in this case the question of land use are figured out professionally. It is then much easier to go to politicians with relevant figures and to find a solution to resolve the problems.

Nevertheless, **the strategy would have been developed even without the EU funded project.** Indeed, as we saw, this will to develop a food strategy comes from a political push and results from several years of work on the theme. But the politicians want to develop this food strategy with academia and to involve as many actors as possible. Research and political actions should be integrated, so the actions are based on solid ground research.

To be sustainable, a project should go through a holistic approach, especially in the area of food. When talking about food production, for example, in the framework of the project, the researchers realised that there were also links to biodiversity, culture, integration and social sustainability. A new type of research project is needed, with a quintuple approach, which means collaboration between researchers and other parts of society: the municipality, NGOs and actors working in the areas affected by the project. This could be farmers, food industries, waste agencies, migrants, schools etc. The platform MISTRA urban futures[62] is one example of this new type of research activities which the city of Gothenburg is involved in. This science policy urban platform is a governmental organisation which supports a number of activities that could be research related. In this case, the researcher is no longer the only one formulating a research issue, this also comes from societal challenges. This platform is an interesting place where city officials can meet with researchers and exchange ideas, it is usually not very easy for these two worlds to meet. This platform has grown and now consists of five local interaction platforms in different cities (Malmö, Stockholm, Cape Town, Kisumu, Sheffield-Manchester), allowing mutual learning.

The URBACT project met the demand of the city for capacity building, knowledge sharing, learning and co-production with other cities, and also with actors at the local level. Indeed, the project allowed the municipality to create a network within the city itself, and to get in contact with stakeholders working in the food sector, like SMEs or NGOs, in particular, through the development of the local action plan. The participatory approach of the project worked quite well in Gothenburg. Local people should be also involved, like farmers or migrants. However, to get them on board, it is important that the project offers them some resources, in terms of time and funding, or in the form of money or lands, for example. Without this input, it is difficult to engage them. This has been the case in the URBACT project, and also in the Climate KIC one.

Budget dedicated to food activities in Gothenburg

The biggest part of the budget dedicated to food in Gothenburg comes from city taxes, which are complemented with a few sources from the EU funded projects. For example, the URBACT project brought 50,000 euros to the city to develop food activities in the framework of the project. Without the project, this work would have been quite expensive, and not every city can afford to develop it, hence the importance of such a project. The project Stadslandet is funded by the municipality to the amount of 18,928,14 SEK (1,944,863 euros), and by the European Union (ERDF) through the programme Utveckling Nordost, Swedish's biggest EU programme for urban development, to the amount of 12,710,904 SEK (1,306,045 euros).

In general, it is quite difficult for the municipality to give a figure on the overall budget spent on food activities because they often come from different departments (Real Estate for urban gardening, Environment for the food strategy, Education for the meals in schools, etc.). The municipality sets a target for the budget, and then each department has to meet this target in their budget. For example, the politicians agreed on 50% share of organic food in municipal canteens. Then, the 10 city districts are given 11 million SEK (1,130,250 euros) to deal with the 50% target. Some smaller projects on the

[62] Website: http://www.mistraurbanfutures.org/en

circular economy or urban farming are also ongoing in the city and mostly funded at the national level or by NGOs. The city's overall budget has a broad scope and does not flag food activities, which makes it difficult to get an overall figure.

The general opinion on funding for research is that it should be more aligned with other funds, as URBACT for example, where capacity-building and translocalism are key. The development of a local action plan in the framework of the URBACT project is also something that was much appreciated by the city: the project thus provided an impetus for action even after it ended.

For the development of this case study, the following people have been interviewed:

- Gunilla Almered Olsson, Department of Global Studies, University of Gothenburg, RETHINK project
- Lotta Silfver and Ulla Lundgren, Food policy in Gothenburg municipality
- Deputy Mayor Ulf Kamne, Urban Planning and Environment
- Per Myrén, Irene Poggi, NGO Changemaker
- Anna Ternell, COWI, Climate-KIC project on Agroforestry
- Petra Senthén, International Department, Gothenburg Municipality
- Mathilda Edlund, Environmental Strategist, Gothenburg Municipality

MILAN: SEEKING COOPERATION ACROSS DEPARTMENTS AND STAKEHOLDERS' INVOLVEMENT

Executive summary

The EU DG DEVCO funded project "Food Smart Cities for Development" (2015-16) raised awareness about urban food policies and sustainable development among citizens and within the city administration. The project enabled the Municipality of Milan to develop a comprehensive strategy "to make the city more sustainable starting from food related issues". The team playing among the Municipality and several and diverse stakeholders (belonging to the private sector, CSOs and research sector) has made the kick off successful: the involvement of private investors (such as Fondazione Cariplo) makes the project sustainable in the long term. The emphasis given to community buy-in and system thinking, and the preference for a multi-stakeholder approach, facilitates the establishment of a local and translocal network of cities around the world. Indeed, the Milan Urban Food Policy Pact – helping its 145 signatory cities to develop additional capacity through knowledge exchange – was also conceived during the 2015 "food momentum". When addressing cities and their needs, the EU funds prepared Milan to play host to "business incubators", experimenting with new and innovative solutions for the food-system of the future. OpenAgri, Milan's "most innovative project" funded by the European Regional Development Fund, is building upon the new awareness of the complementarity of research results and political will. Precisely because the city administration was not directly involved, the FOODMETRES project, an FP7 project, felt short of its potential to provide policymakers with comparable data and cognitive tools to guide their action.

The city of Milan headed up the Food Smart Cities for Development project, a DG DEVCO funded project, which ran from 2015 to 2016. The overall objective focused on aspects such as educational development and awareness raising, with an emphasis on topics of decentralised cooperation, food security and sustainable development. The project funding allowed Milan to undertake a one-year process to define its food strategy, with the support of Fondazione Cariplo, an Italian bank foundation which is active in local development and food related issues. This process was carried out within the context of Milan Expo 2015 – "Feeding the Planet, Energy for Life", the universal exhibition dedicated to food and sustainability. The "Guiding Principles of the Milan Food Policy 2015-2020" (the Food Policy) centre on a comprehensive strategy on food for the city of Milan. It was presented in 2015 as *a tool to support city government to make the* city *more sustainable starting from food related issues*.[63]

The *principles* are the outcomes of this year-long process, which has been divided into two key phases: Phase 1. Comprehensive analysis of the city's food system, Phase 2. Public Consultation with different stakeholders involved in food-related issues, such as farmers, CSOs, enterprises, researchers, city officials etc.

In the first phase, a "context analysis" of Milan's food system was utilised. The results provided an overall assessment of the food cycle in Milan together with an overview of the various food-related policies implemented by the Municipality thus far and a precise mapping of the various stakeholders. The second phase consisted of carrying out an overview of the key findings attained during phase 1. These, in turn, were then called into (public) question and a public consultation was carried out. Approximately 1,000 stakeholders (city officials, universities and research centres, profit and non-profit companies, and ordinary citizens as well) gathered for town meetings and produced about 100 concrete proposals as well as actions for the food policy of the city. The strong commitment of the Municipality and the stakeholders – and an expert use of social media – helped the dissemination of the results, raising individual and public awareness about food related issues and sustainability. A very innovative approach, indeed, characterised the shift towards sustainability and the focus on food-related issues. The feedback and consensus which resulted from the various stakeholders involved during city hall meetings provided the outputs which were then incorporated into the city's food strategy.

---

[63] As in "Milan 2015-2020 Food Policy Guidelines" – *Foreword*, p. 6. Publicly available at: http://mediagallery.comune.milano.it/cdm/objects/changeme:71638/datastreams/dataStream394358726867066 9/content?1482924699146

Finally, the follow-up to this work can be termed "Phase 3". This included the concrete implementation of the principles that had taken shape over the course of the first two phases. It was an opportunity to establish firmer relations between the city's administration and the business world (subsidiaries and private companies). Two examples of this "new deal" are: the project "Pasto Sano" (Healthy Meal), this promotes healthy eating habits during lunch breaks in bars and restaurants throughout Milan; and the joint programme between Distretto Agricolo Milanese (DAM, the Milan farming district) and Milano Ristorazione to have increasing amounts local products in the public canteens, through green public procurement.

Milan City Council's approval of the Food Policy came together with the signing of the Milan Urban Food Policy Pact (MUFPP) by 46 cities from across the globe. It took the priorities set out by communities at the local level and expanded them to an international stage. The MUFPP has reached, as of June 2017, 145 signatory cities, representing more than 450 million inhabitants. The EU project Food Smart Cities for Development helped the Pact to grow, having provided four additional staff members to support the city administration's action in the period 2015-2016.

The ultimate goal of the Food Policy is to guarantee healthy food and drinking water for all citizens. In this sense, the strategy represents a breakthrough agreement as it provides local empowerment so as to make *food* a policy goal. The Food Policy promotes a sustainable food system together with raising consumer awareness and taking advantage of the latest (even experimental) scientific agri-food research, to tackle major environmental and social issues. Food waste is not alone in this regard.

System thinking has informed the broad and holistic approach adopted in the development of this strategy. Nonetheless, the city administration itself stressed the fact that they could not be the sole actor involved. The Milan Food Policy provides an innovative framework, one which uses co-creation in order to involve stakeholders from a range of sectors through an engagement mechanism which is long-term.

This process was granted by a dedicated *city –facilitator* tasked with the identification of relevant stakeholders and the most appropriate means for their engagement. The emphasis revolves around community buy-in: Food Policy innovation involves aspects of *social* innovation. This articulated and inclusive process was possible due to the EU funds for the FSC4D project, which permitted funding and staff to organise and carry out the necessary work.

The Municipality has taken action in several areas covered by the MUFPP Framework. In fact, the Pact was conceived in conjunction with the efforts made to establish a local food policy, when the *food* was gaining momentum. Milano Ristorazione, a subsidiary in charge of public canteen catering, created sustainable diets plans for schoolchildren and the elderly, most often in areas with precarious social situations. Subsequently, it also integrated distinctive sustainability criteria with a view to providing school canteens with local rice which was cultivated by local peri-urban producers.

Another example can be seen with the "Zero Sprechi" (Zero Waste) project. This entailed the city administration engaging with the private sector (for instance, Assolombarda, the regional industrial federation) and universities (the Milan Polytechnic) in furtherance of combatting current food waste levels.

In both cases, vision and priorities of the Food Policy come about. In the first example, in particular, the first three priorities emerged: while ensuring access to healthy food (first priority), the Municipality's action went further, promoting the sustainability of the food system (second) and a culture oriented to consumer awareness (third). In the second example, the fourth priority – fight against waste – is implemented through the fifth one – to support and promote scientific agri-food research.

In order to keep the machine *well-oiled*, a reform of the food governance system at the Municipality level started at the beginning of this year and is currently ongoing. The Vice-Mayor has been recently (February 2017) appointed by the Mayor as food policy coordinator for the city. This move aimed at enhancing interdepartmental collaboration and coordination, while bringing food policy instances and requests – eventually vested with political strength – right into the Mayor's office. Moreover, the Municipality is processing the applications for two new posts, possibly assigned by July, respectively as food policy officer and food communication officer. The goal of a more comprehensive policy implementation is ever closer. Political consensus around the issues addressed at the Municipality level is also growing at the national level. Last November, in fact, on the occasion of the first "Settimana della Cucina Italiana nel Mondo" (Week of the Italian Cuisine in the World), the Italian Minister of Agriculture, Maurizio Martina, defined food as *a political issue*, echoed by Prime Minister Paulo Gentiloni (who

welcomed the era for kitchen-*diplomacy*).[64] Aside from these large premises – which can still be read as hopeful signs for future developments - in Italy the notion of food sustainability has long been limited to the promotion of organic agriculture – and often linked to the struggle for extending the scope of the Made in Italy certificate. According to the Food Sustainability Index (developed by The Economist Intelligence Unit together with the Barilla Center for Food & Nutrition), Italy is now on the right path (the 6th best among the countries considered); in particular, a strong political response was given to food waste at the end-user level (restaurants, household, etc.), estimated at 5.1m tons every year. In fact, the 2016 "Gadda law" encourages firms to donate food to charities, loosening regulations (that is, cutting the red tape on food donations). At the same time, it promotes the use of so-called "doggy bags" (more appealingly renamed as "family bags"), aimed at triggering a cultural change. The very innovative approach, preferring incentives to punishments, makes the act an avant-garde law, most praised by non-profit organisations. However, Italy still has a lot of work to do to tackle the prevalence of over-nourishment, reflecting in high rates of obesity and overweight among children aged 12-18 years-old. In doing so, the country has to get to grips with the expanding agro-mafia, which jeopardises the progress made. In this context, the European Union took Italy's side: benefiting from the EU funds available within the European School Fruits Scheme, Italy developed the national program "Frutta e Verdura nelle Scuole" (Fruits and Vegetables in the Schools). In implementing the EU regulation – whose main objective is to *increase consumption of fruits and vegetables among children by durably increasing the share of those products in their diets*[65] – the Italian initiative focused on raising the awareness of the children, providing them with the knowledge and the tools to become informed and demanding consumers in the future.

Nonetheless, the relative success of these single projects does not conceal the lack of an overall food strategy at the national level: various issues are considered separately, often in a logic of emergency, and a systemic approach to food policy is still far off. In this sense, the over-arching experience of Milan can be a path to follow.

Overview of the EU funded projects

The European Union's (EU) funds played a crucial role in Milan's urban food policy innovation, contributing to the creation of an enabling environment for food systems which are increasingly sustainable and health-focused. Within this framework, Milan was entrusted with a pivotal role for the launch, promotion and implementation of the MUFPP. "Food Smart Cities for Development" (FSC4D)[66] is a EuropeAid project (DG DEVCO). It was initiated in 2015, the European Year for Development (EYD), within the frameworks of the DEAR Program, the EYD campaign and Milan Expo 2015. The overall objective of education development and awareness raising was geared towards topics such as decentralised cooperation, food security and sustainable development. Milan – which also co-financed the project – was the lead partner in a newly constituted network of Food Smart Cities, laying the groundwork for a coordinated urban food policy agenda and actions of raising awareness for European citizens.

The enhancement of citizens' participation within the governance system is perhaps an emblematic characteristic of innovative ethos associated with the project, it helped to mould the concept of political ownership in relation to food related matters. The objective of the project is *to make partners' cities and CSOs participate in the debate regarding the post-2015 agenda*[67]. This highlights the project's ambition to continue even after the official conclusion (in 2016). The relationships with the researchers were crucial to the success of the Food Smart Cities. It was cultivated from the outset with ad-hoc meetings, the creation of clusters and working groups. In fact, FSC4D delivered its results – in terms increasing awareness of the general public and politicians. This occurred on three different levels.

At the local level, the project laid the foundations for the Milan Food Policy itself, the overall food strategy of the Milan Municipality which is described above. This sprang from a series of meetings with a myriad of

---

[64] The statements were made during a meeting in Rome to present the initiative. http://www.ansa.it/canale_terraegusto/notizie/in_breve/2016/10/26/settimana-cucina-italiana-martina-cibo-fatto-politico_8eed8f52-43b3-4be8-b2d6-b70bb269a363.html

[65] "European School fruit scheme – A success story for children" – *What is the European school fruit scheme?* Publicly available at: https://ec.europa.eu/agriculture/sites/agriculture/files/sfs/documents/leaflet_en.pdf

[66] "Food Smart Cities For Development" at http://www.milanurbanfoodpolicypact.org/project/

[67] Ibid.

stakeholders. In particular, the 2015 Universal Exhibition - whose official theme was "Feeding the Planet, Energy for Life" - was itself hosted in Milan and acted as an amplifying tool for the programme.

With regards to the intermediate level of deliverables – regional level – this consisted of a set of guidelines vis-à-vis the drafting, development and implementation of local food related policies for the European participant cities and aimed to strengthen their role in the promotion of sustainable development. The other participant cities were: Barcelona, Bilbao, Bruges, Marseille, Turin and Utrecht. The municipalities of Dakar, London and Thessaloniki and the departments of Antioquia and Medellin were associated partners.

Lastly, the FSC4D instances were brought forward to the international stage: the launch of the Milan Urban Food Policy Pact was itself a result of the project funded by the DG DEVCO. The Pact is still growing today as 145 cities all around the world have signed it, representing over 450 million citizens. The Pact developed strategic partnerships with other global networks and institutions such as EUROCITIES, C40, FAO and participates to the EU Platform on food waste and losses. The Pact, in turn, triggered the creation of the Dakar Forum, the gathering of MUFPP West-African cities and established the MUFPP Annual Gathering and Mayors Summit, hosted every year by a different MUFPP signatory city.

Moreover, thanks to the FSC4D project which helped to launch the MUFPP – along with the support of Fondazione Cariplo - the city of Milan launches the Milan Pact Awards (MPA) on an annual basis so as to award signatory cities for their good food practices. The monetary awards are then used by the winning cities to disseminate their good practice to other signatory cities or to spread the Pact as a tool for other local governments who want to work on the sustainability of their urban food systems.

In all, cities play a central role as facilitators and enablers for the recognition of innovative practices stemming from private citizens. The idea is that cities play host to "business incubators" or "solutions labs" for experimenting with new solutions and innovative ideas for the food-system of the future. However, taking into account the very specific needs and wants of individual cities, as well as the potentials for synergies with the research, has yet to be fully explored.

The FP7 project "Food Planning and Innovation for Sustainable Metropolitan Regions" (FOODMETRES)[68], funded by the DG RTD, led by the Wageningen University (NL), started along these lines. Indeed, it aimed to provide the cognitive tools which can enable the creation of guidelines and useful indicators for policymakers. An accurate analysis of the local food system features was designed to identify opportunities for innovation with food supply chains. Both current and potential equilibria in supply and demand relationships have been investigated and quantified. The outcome was very rich in terms of data, tools and indicators. However, it was very much 'pure' research. The authors established strong bonds with academic institutions and SMEs (in particular with the COLDIRETTI, the federation of Italian farmers), working towards a more holistic understanding of how cities feed themselves. In this case, however, the administration itself was not directly involved: *a spatially explicit approach towards food planning*[69] was pursued without input from the spatial planning department of Milan's Municipality. While the GAS ("Gruppi di Acquisto Solidale", ethical purchasing groups) and other alternative chains were relatively successful, the attempt to systematise the research results, pursued through meetings with many distribution agents (for instance, Esselunga and Cortilia) failed in their objectives. The scarcity of resources available, after EU funds had dried up, was one of the primary causes.

Furthermore, cooperation with city-officials was sought in the H2020 "U-Turn"[70] project funded by the DG RTD, which is still at an early stage (and running until 2018). Milan, together with Athens and London, was selected as a representative city to explore new models for urban food distribution and logistics with the aim of making them more efficient and environmental and cost-friendly. Milan has a model of collaborative logistics which was very attentive to issues surrounding the food miles. A fruitful discussion with market stakeholders – especially small-medium farmers in the peri-urban areas of Milan - preceded the pilot actions. The objective was to assess possible difficulties in the implementation and to suggest new business models for consolidation schemes.

The project aims to design and implement a web-based collaboration platform which is able to address the asymmetry of information while providing a tool for creating logistics sharing partnerships between small food companies and retail outlets. A shorter chain – a theme which is increasingly gaining traction within city circles - is thought to facilitate the matching of supply and demand.

---

[68] "FOODMETRES – Food Planning and Innovation for Sustainable Metropolitan Regions" at http://www.foodmetres-kp.eu/

[69] Ibid.

[70] "U-Turn – New Model for Urban Food Transportation" at http://www.u-turn-project.eu/

OpenAgri[71], a project won by the city of Milan in the first UIA call, started in 2016 and financed by the DG REGIO, follows a similar trajectory. Praised as Milan's "most innovative project" by the Mayor, it was co-financed by the Municipality and the European Regional Development Fund (ERDF). The total project budget is 6,245,000 euros, of which 3,040,000 euros is assigned to the Municipality of Milan. OpenAgri aims at setting up an "open innovation hub on peri-urban agriculture", a tool for supporting the search for creative experimental solutions of young entrepreneurs and SMEs. In other words, it is meant to develop *new skills for new jobs in peri-urban agriculture*.[72] The project relies on the collaboration among the city of Milan and three institutional partners – namely the Chamber of Commerce, the Foundation of the Polytechnic of Milan and Parco Tecnologico Padano (whose motto is "research becomes enterprise") – and a wide and diverse network of stakeholders linked to the territory.

The evidence collected provides credence to Milan's work: the agricultural area makes up more than 40% of the Metropolitan District, while at the same time Milan has a flourishing start-up scene (accounting for about 15% of national innovative start-ups). Selecting Porto di Mare, a former industrial area in the southern periphery of Milan, for the realisation of the hub, the Municipality also formulated the project as part of an integrated urban regeneration effort. The ultimate objective is to consolidate an integrated approach to food policy, merging the agricultural sector with economic innovation, cutting-edge technology, urban renovation and social inclusion, in particular addressing youth. The experimentation of new technologies is linked to various pilot projects at different stages of the food chain: transformation and processing of food, consumption and distribution and waste management. Thanks to the synergies between the city and the research sector led by the Polytechnic of Milan, the Milan State University and Parco Tecnologico Padano, the project fused territorial development and innovation, in pursuance of food policy and social inclusion goals.

Impact of the Research and Innovation projects

"Now there's much talk about food in Milan and FSC4D cities". This, according to a chief municipal officer, is the key outcome of the FSC4D. More than 13,000 Milan citizens participated, to varying degrees, in the project. The increasing awareness of citizens in relation to sustainable development and the ever-broader and louder debate around food related issues has placed urban food policies at the forefront of decision makers' political agendas. The resonance given by the EU funded project even attracted new financial partners (for instance, Fondazione Cariplo, become the main sponsor of the MUFPP).

The Milan Municipality's internal governance mechanisms were adapted to the increasing demand for food policies and food innovation. The Vice Mayor has been appointed by the Mayor to coordinate Milan's food policy, and new cross-department positions such as food policy officers are to be filled after an open

Figure 22 Overview of Milan's countryside

competition. The idea of appointing the Vice Mayor for Food Policy is significant, as the Vice Mayor is collocated into the Mayor's Office. Food Policy of the city is at the core of the municipal administration, therefore responding to the need for better governance within the urban food system. Due to the fact that food is a cross-cutting theme, putting its governance in the hands of the Mayor's office allows improved and comprehensive administration, dealing with the different city departments and streamlining food-actions, policies and setting up a comprehensive strategy.

[71]"OpenAgri Uia – New Skills for New Jobs in Periurban Agriculture" at http://www.comune.milano.it/wps/portal/ist/it/amministrazione/internazionali/Progetti/progetti_europei_in_corso/OpenAgri+Uia

[72]http://www.comune.milano.it/wps/portal/ist/it/amministrazione/internazionali/Progetti/progetti_europei_in_corso/OpenAgri+Uia

Milan-led MUFPP added a translocal dimension: the participation of the cities to the Pact helps them to develop additional capacity and enhances knowledge exchange and cooperation between urban areas on food-related issues. From then on, the quantity and quality of food related activities initiated by the partner cities have risen steeply. The existence of strong international partnerships, ready to cooperate towards a common goal, can be seen as a solid starting point for the development of future projects.

The project results would have been impossible to achieve without the EU (DG DEVCO) (*at least initial* funding). Indeed, the Municipality could have never afforded the staffing costs for 4/5 people dedicated full-time employees. The fact that the FSC4D project turned out to be a kick-off allowed for private investors (such as Fondazione Cariplo) to become involved, it also left the door open for joint actions at a later stage.

In this respect, the Municipality and the researchers involved in this study highlighted the need for longer-term projects and EU investments, especially when the aim is to combine research and policy activities in cities.

Indeed, five years are barely enough for combining research and political actions: after the first year/year and a half, the results should start to be tested and subsequently translated into pilot schemes. The latter proved essentials to attract investors and ensure the programme is sustainable in the long run.

A leading criticism of the FOODMETRES project relates to the fact that it's based on "pure research", with a limited impact in terms of practical use, communication and dissemination – especially with city officials - of the results obtained. The ultimate purpose of any fact-finding project was unaccomplished. FOODMETERS *assessment show[n] that increasing food self-sufficiency will require substantial land use changes in order to balance demand and supply as well as higher resource efficiency*[73], these factors were not addressed to those who could undertake the necessary recommended actions.

The FOODMETRES project had the potential to fill a void: missing data – in particular, comparable data. It is one of the biggest issues for European cities trying to understand how to improve their food systems. Most city officials are not aware of any data regarding the percentage of food which is either imported or exported in Milan. Such data and information could be used as the basis for innovating food procurement methodologies and urban guidelines. FOODMETRES researchers also took note of a new paradigm for the sustainability of food systems of the city and novel tendencies in production and consumption of food in the city, rising to the challenge of an increasingly green, locally produced and vegetarian food demand by citizens.

Nonetheless, they could not draw the city administration's attention to such occurrences. The decision to discuss the research results during a conference at the science museum turned out to be a somewhat self-referential.

On the other hand, a second project in which FOODMETRES is taking part demonstrates that the interaction with the city administration makes the difference. In that it has established a close cooperation with the Municipality of Milan and the Polytechnic University of Milan for implementing an evidence-based food system design in Porto di Mare.

A final assessment is impossible for the other two projects, OpenAgri and U-Turn, which are still in an embryonic stage. Nonetheless, the commitment of TRT – the consultancy firm which is running the U-Turn project – is to work closely with the key public and private actors. A strong multi-stakeholder partnership, and the ownership of the OpenAgri project by the Milan Municipality allows for a certain degree of optimism to connect research and innovation to concrete policy making in urban food related matters.

In conclusion, the use of Milan as a case-study illustrates the *potential* of the cities to be political driving forces for food system innovations. Nonetheless, a series of conditions need to be fulfilled. Cities' actions must be guided and supported by the *research* – or rather by a research run *in the field*, and involving *numerous stakeholders* which span a plethora of sectors and different segment of civic society along with the key roles played by city administrations.

---

[73] FOODMETERS, "Synthesis Report" – *Introduction*, p.4. Publicly available at: file:///C:/Users/francesco.brusaporco/Downloads/Wascher%20et%20al.%20(2015)%20Foodmetres%20-%20Synthesis%20Report.pdf

Successful projects facilitate *network* construction at the local level, but also *translocally*: municipal initiatives have a knock-on effect on the metropolitan district, the region, the state, and even the international community and this was demonstrated by the Milan Urban Food Policy Pact experience which is continually expanding. The peer-to-peer exchanges allow for the diffusion of good practices to be possible, and even affordable. For this reason, the long-term European investment in projects is specifically targeting urban food policy programmes, and rewarding the most comprehensive and participatory ones. This could help to address the uncertainty which results from the strong dependency on political will and, at the same time, incentivise the development of an overall strategy for the city.

Budget dedicated to food activities in Milan

The Municipality budget dedicated to food related projects running from 2015 onwards – and in line with the principles of the Milan Food Policy – is 3,809,467.96 euros. Most of it (3,044,467.96 euros) is covered by external financing. The proportions are more or less the same for both the FSC4D (DG DEVCO - EuropeAid) and the OpenAgri (DG REGIO – UIA) projects, whose overall values were respectively 691,280.46 euros and 3,040,000.00 euros (four times as much!). It is worth noting the fact that these figures only represent the actual city budget – which does not include, for instance, the several "satellite activities" taking place *in* the city but handled through other funding channels. These costs were met for 4/5 by the EU funding programs, while the Municipality – which was the leading partner - integrated the remaining fifth. Significantly, the Municipality was not directly involved in the FOODMETRES (DG RTD – FP7) project, nor (yet) in the U-Turn (DG RTD – H2020) project.

For the development of this case study the following people have been interviewed:

- Cinzia Tegoni – Food Smart Cities for Development Project Manager
- Marco Mazziotti – Responsible for EU Affairs Office in Milan
- Franca Roiatti, Communication Officer for Food Smart Cities for Development
- Stefano Corsi – FOODMETRES Researcher
- Federica Monaco – FOODMETRES Researcher
- Dirk Washer, WUR University – FOODMETRES Coordinator
- Giuseppe Galli – U-Turn - TRT srl

LISBON: HEALTHY FOOD AND SOCIAL CONSIDERATIONS

Executive summary

Even without having a food strategy, the Lisbon municipality is very closely following the political direction that the national level is taking on food, and more precisely on healthy food and healthy diet, implementing its own projects to reach these goals. For the last few years, Lisbon has also been more and more involved in European funded projects, and more particularly into HORIZON2020 projects. Two H2020 projects are interesting in the framework of our study, focusing on food (mainly food waste re-use and prevention), URBAN – WASTE, urban strategies for waste management in tourist cities and FORCE - cities cooperating for a circular economy. These two projects, in which the city is involved as a full partner, have a high expected impact, especially to the improvements in cost, material and waste management hierarchy in Lisbon. The project will also look at the prevention of food waste in Lisbon, that will be reached thanks to the use of the different smart Apps developed by the two projects. These projects will help reduce waste production and raise awareness, but also help cities to share good practices with other local regions and build a strong network of stakeholders. Finally, even if officially dedicated to environmental objectives, both projects include a strong dimension of citizen engagement, co-creation and attention to social issues in line with the other activities of the city.

Lisbon does not have a food strategy, but is involved in various different food related activities. What is interesting in the Lisbon case, is that the food innovations activities are a result of the national work on food.

On the national level, Portugal is quite involved in implementing food activities, in particular under the Portuguese Directorate-General of Health (DGS). In 2012, The National Programme for the Promotion of Healthy Eating (PNPAS) in Portugal was launched with the mission to "improve the nutritional status of the population, stimulating the physical and economic availability of healthy foods and creating conditions so that the population can value, appreciate and integrate them into their daily routines"[74]. This strategy, one of eight priority health programmes, aims at improving the nutritional habits of the population by encouraging the physical and economic availability of food. This programme aims to develop a healthy eating pattern and create the opportunity for citizens to value and follow them. The result will be an improvement in the nutritional status of citizens, and a direct impact on the prevention and control of the most prevalent diseases in the country (obesity, diabetes, cardiovascular diseases). On the other hand, it should also allow economic growth. "Using multi-sectoral collaboration, it represents the first comprehensive national strategy in the field of

Figure 23: overview of Belème tower in Lisbon

[74] Programa Nacional da Promoção da Alimentação Saudável – Orientações Programáticas. Lisbon: Direção-Geral da Saúde; 2012 (http://forumenfermagem.org/dossier-tecnico/documentos/orientacoes-tecnicas/nacionais/programa-nacionalpara-a-promocao-da-alimentacao-saudavelorientacoes-programaticas#.V0L2Sr6vw1g)

food and nutrition in Portugal after the first programmes launched in 2005 and 2007 by the Ministry of Health to fight obesity at national level"[75]. Indeed, different sectors are involved to reach these goals, including agriculture, environment, tourism, and even employment. The programme has five general objectives:

1. To increase knowledge about the food intake of the Portuguese population, and its determinants and consequences.
2. To modify the availability of certain foods (high in sugar, salt and fat) in schools, workplaces and public spaces, and to combat child obesity. In that sense, the government will integrate a sugar tax on soft drinks. This measure should raise 80 million euros for the public health service[76]
3. To inform and empower individuals on the purchase, preparation and storage of healthy food, especially within the most vulnerable groups.
4. To identify and promote cross-sectoral actions that encourage the consumption of foods of good nutritional quality in an articulate and integrated way with other sectors, namely agriculture, sport, environment, education, social security and local authorities.
5. To improve the qualifications and conduct of the different professionals who, owing to their roles, may influence nutritional knowledge, attitudes and behaviours.[77]

The city of Lisbon does not have a comprehensive food strategy as it is done at the national level. According to city officers involved in food activities, the Lisbon municipality is restricted to its inner-city boundaries, and a resilient approach, related to food supply, for example, would be an interesting idea, but feasible only in the framework of a regional planning or at a metropolitan scale.

However, Lisbon is taking part in many different food related activities. For example, Lisbon City Council is developing a joint project, "Selo Saudável" (Healthy Food Seal) in cooperation with the national level, and more specifically with the Directorate-General of Health through its National Programme for the Promotion of Healthy Eating. This initiative was launched at the end of 2016 within the scope of health promotion and local health policies planning. This project aims to, through a public award, to encourage the institutions of social economy to implement a set of food and nutrition standards, ensuring a healthier diet, based on the Mediterranean food pattern. Self-catering, private institutions for Social Solidarity, associations and cooperatives, active in Lisbon, are able to join the project and to apply to receive the Healthy Food Seal. This seal enables participating entities to improve their ability to provide quality meals and to qualify their workers, but also to allow users to identify the companies providing healthy food choices. The seal is valid for one year. In the framework of the project, guidelines[78] were developed to raise awareness on healthy food, with different ideas and healthy recipes available to anyone.

The city of Lisbon is also developing a project called "Hortas Urbanas", a project of urban allotment gardens under the framework of an ecological and social inclusion target. The project today consists of 750 plots in 16 parks and is part of a new concept of Nature Based Solution green infrastructure, where citizens are directly involved in the management of land and food production. Unfortunately, the reduced quantities of land cannot allow consistent food supply. These gardens are mainly used as a tool for social inclusion, providing the possibility for people to manage their own land. Some workshops are organised to teach the citizens who won the public contest and are now renting a plot, how to farm organically.

The municipality also promotes projects of urban gardening in schools, to raise awareness among children on how food is produced and to teach them to be more sustainable. These projects are very much defended and supported by a political statement, as tools to overcome multiple challenges, thanks to new nature based solutions, social integration, and awareness raising.

---

[75] Report the Portuguese National Programme for the promotion of healthy eating http://www.euro.who.int/__data/assets/pdf_file/0006/314097/Volume-2-Issue-2-REPORT-the-Portugese-National-Programme.pdf?ua=1

[76] Portugal to levy sugar tax on soft drinks in 2017, The Guardian, http://bit.ly/2dfqQDH

[77] Report the Portuguese National Programme*, op. cit.*

[78] Guidelines available here (in Portuguese): http://bit.ly/2uS7eK9

Lastly, Lisbon has been showcased as a good practice example for its waste collection in the European Project Regions for recycling (R4R)[79]. Indeed, Lisbon implemented a door-to-door collection scheme in 2003 in households for paper/cardboard and packaging. Since 2005, organic waste collection in restaurants, hotels, markets and similar companies has also been in place. Lisbon is quite advanced in its waste management and chose to focus new efforts in its improvement, getting involved into two European projects dealing with food waste and circular cities.

Overview of the EU funded projects

In recent years, the municipality of Lisbon has been more and more involved in European projects, and especially in Horizon 2020 projects. Lisbon is, for example, a partner in the project Sharing cities[80], an ambitious programme for a better, common approach to making smart cities a reality, fostering international collaboration between industry and cities. Last year, Lisbon municipality started a new Horizon 2020 project, RESCCUE[81], aiming to deliver a framework enabling city resilience assessment, planning and management and create new software tools, to integrate new knowledge related to the detailed water-centred modelling of strategic urban services performance into a comprehensive resilience platform.

Lisbon is also involved in two H2020 projects related to food activities, URBAN WASTE and FORCE.

URBAN WASTE - Urban strategies for waste management in tourist cities, is a H2020 project that started in April 2016 and will last for three years. This project aims at finding strategies that will help reduce the amount of municipalities' food waste, but also create strategies to reuse and recycle waste.

The project integrated the circular economy model, to develop innovative initiatives, focusing on cities with a high level of tourism. The aim of this project is to combat the negative externality of tourism. Eleven cities and regions are supporting the project and acting as pilot cases: Florence, Nice, Syracuse, Copenhagen, Kavala, Santander, Nicosia, Ponta Delgada, Dubrovnik – Neretva county, Tenerife and Lisbon.

This project is focused on co-creation between local stakeholders, but also between public authorities, and presents aspects of applied research. The main deliverables from this project will come from mutual-learning. Within the framework of the project, an Action Plan on waste management, "with the aim of orienting and defining the actions needed to empower stakeholders and citizens towards a reduction of waste production and a better management of tourism waste and to promote this concept among decision makers"[82], will bring together different stakeholders in a mutual learning to consider cross-cutting questions and to together propose eco-innovative solutions.

The Plan will then be articulated into eleven implementation plans, one in each pilot city and region. Eleven mutual learning and capacity building events, one in each pilot, will take place throughout the project, on different themes. In Lisbon, the event will focus on the "implementation of the eco-innovative waste management measures: barriers and good practices" to take place in December 2018. These events will include local stakeholders in workshops, experts and policymakers, but also other municipalities/regions interested in the theme. In terms of deliverables, Lisbon municipality will be developing a food waste tracking system for hotels and restaurants. This tool will simplify data collection and feedback for restaurants and hotels to be able to assess their food waste production.

The second European project on food in which Lisbon is involved is called FORCE – Cities cooperating FOR Circular Economy, a H2020 project that started in September 2016, and will last for four years.

---

[79] See report "Lisbon: door-to-door selective collection" http://bit.ly/2tYWcXf

[80] Sharing cities website: http://www.sharingcities.eu/

[81] RESCCUE website: http://www.resccue.eu/

[82] View website: http://www.urban-waste.eu/municipality-forum/

"FORCE goal is to turn a source of pollution and a cost into an opportunity and value"[83]. The aim of the project is to work towards circular economy, to transform waste into value. Four cities are involved in the projects, Copenhagen, Hamburg, Genoa and Lisbon.

These cities will develop four pilot projects, and each of them will focus on four different products and waste chains. Thus, Copenhagen will work on plastic waste, Hamburg on strategic metals, Genoa on wood waste, and Lisbon on food and bio-waste. Besides these themes, Lisbon's work will focus on food waste reduction, reuse, new market opportunities and the use of organic fertilisers, and also on green jobs' generation and green public procurement.

Figure 24 Overview on the Praça do Comércio in Lisbon

In its work on the waste chain of food, the capital of Portugal will develop specific deliverables: the municipality will implement an extended online network of stakeholders from the food value chain and make them commit to the circular economy principles. This network will involve donors (such as big companies, supermarkets, catering companies, municipal markets, hotels and restaurants, municipal canteens) and producers, redistributors and collectors, beneficiaries and recovery facilities. Lisbon will also develop an App Network Tool, supporting the online network to be used by all stakeholders. This App will help in Lisbon's second task, namely campaigning to raise awareness on food waste prevention, composting and bio-waste source separation. The main goal of this task will be to implement composting, and thus improve green waste quality, and to enlarge the D-t-D (door to door) kitchen waste collection in households to include restaurants and similar. The other cities partners will investigate the possibility to adapt the App developed by Lisbon for their own city context.

Impacts of the projects

The first thing to bear in mind concerning the analysis of the impacts of these two projects is that it is quite difficult to assess them because the two projects only recently started. The analysis here will instead focus on the expected impacts and forecast on the added value the project impact will create for the city.

The impacts are expected to be high for the city, especially in the improvements in cost, material and waste management hierarchy, but also for further stakeholder engagement. These projects will, for instance, have an important impact on the prevention of food waste, and a higher awareness will be reached thanks to the use of the different Apps developed throughout the two projects.

Reducing food waste - and more generally urban waste production - is one of the main outcomes expected in the city, and this would come through sharing good practices between hotels and restaurants from different cities for the prevention of food waste, especially in the framework of the project URBAN-WASTE.

One consequence will also be the improvement of the municipal waste management. Moreover, better food waste management will reduce landfill and the incineration of bio-waste. Accordingly, CO2 emissions will be reduced. Finally, more people in need will be able to benefit from food redistribution, supporting the Portuguese Zero Waste Movement[84] that currently collects and redistributes around 1,200,000 meals.

[83] FORCE website: http://www.ce-force.eu/

[84] "Zero Waste Movement was created in 2011 with the objective of fixing the fact that 50,000 meals used to go straight in the bin every day, while 360,000 people went hungry in Portugal." See more information: http://bit.ly/2tohUCE

FORCE will improve the current state with an increase of 50%. Economically, the support of the state to social services can be reduced by 1.5 million euros. The savings in food waste would result in reducing CO2 emissions by around 1,260 tonnes every year. FORCE will also help strengthen the competitiveness of company profiles, due to a clear communication of the donors and their willingness to take a social responsibility.

Generally, the impacts of these projects will be quite high for Lisbon. Indeed, having the city as a partner here is one of the main reasons for this success. The municipality has the budget to take part in the project, and can then support the development of tools, in the framework of the projects, that will concretely contribute to a better waste management system, and will be used after the end of the project. Furthermore, these projects put the municipality in a network of local stakeholders, helping to create links between them, and providing the opportunity to work together, both now for the projects, and in the future, to co-create better and circular solutions for the city.

Finally, these two projects also created a network between the public authorities involved, allowing capacity building between cities (and regions in the case of the project URBAN WASTE) and exchange of good practices. Moreover, the expected impacts in the project FORCE will also be replicated in the other partner cities, permitting an even stronger impact of these projects.

Budget dedicated to food activities in Lisbon

As already experienced in the other case studies, it has been difficult to gather an overall budget of what Lisbon municipality is spending on food activities, since this budget covers different activities, in different sectors and departments.

The budget covering the cities activities in term of food, such as the urban gardening projects, is mostly coming from the municipality and from taxes, but some private sponsors also partly fund these projects. Some of the allotment gardens, for example, belong to supermarkets.

There is also some budget coming from the national level, and more precisely from the Directorate-General of Health through its National Programme for the Promotion of Healthy Eating, in the framework of the "Healthy Food Seal Project" (Selo Saudável). For the first year of the project, the municipality spent 13,290 euros in costs, divided into several areas: materials, training, show cooking and the development of a digital app. For now the pilot project will last one year, but there are intentions for the project to continue for a second year at a more extended level.

Finally, during these past years the involvement of the Lisbon municipality in European funded projects (mainly H2020 – some officers pointed out the difficulties for the city to see its proposal accepted in the framework of the LIFE calls) allowed the city to receive important funds (4,248,782.50 euros for URBAN WASTE and 11,308,117.50 euros for FORCE) to participate in new activities with lasting impacts.

For the development of this case study, the following people have been interviewed:

- Celeste Oliviera, Lisbon Municipality, URBAN – WASTE project
- Carla Tamagnini, Lisbon Municipality, FORCE project
- Duarte Mata, Lisbon Municipality, Green Structure and Energy Deputy Mayor´s Office
- Ana Domingues, Lisbon Municipality, Nutritionist, support to the group that promote urban agriculture in the city of Lisbon
- Graça Ribeiro, Lisbon Municipality
- Pedro Graça, Director PNPAS
- Sofia Sousa, PNPAS/DGS

ANNEX 3 METHODOLOGY

This publication is the result of two consecutive tasks, which were 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.

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): Final report, summarising main results.

The first part is the results of the following operational steps:

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 below) 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. 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.

The second part is the results of the following operational steps:

1. Desk research and contacts with EU projects for research and innovation (FP7 and H2020) focusing on the topic of food and cities.
2. In-depth research in collaboration with the selected cities.
3. 5 in-depth interviews with politicians and technical experts from the selected cities.
4. Drafting of the report.

Bias 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 all 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.

Table 14: 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	Online 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
Zagreb, Croatia							x
Zaragoza, Spain							x

Targeted cities of these research were EUROCITIES members (figure 25) and MUFPP signatory cities (figure 26).

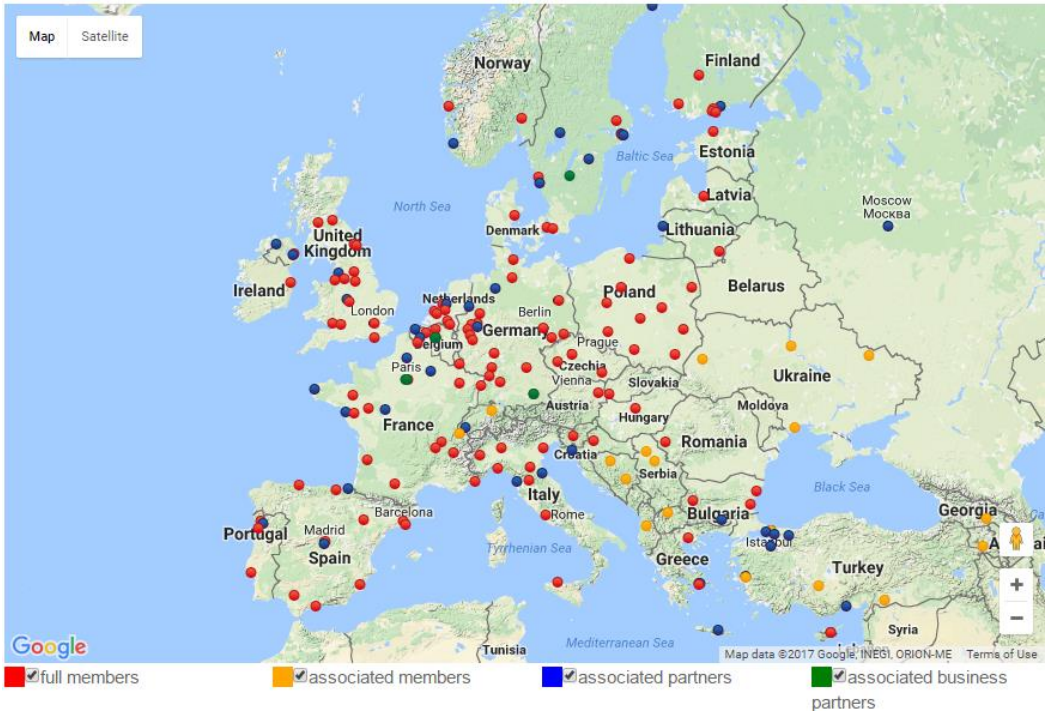


Figure 25 EUROCITIES members map

Figure 26 MUFPP signatory cities

Information were directly collected by 45 cities from Europe (figure 27) and the world (figure 28) 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 provide direct information.

Figure 27 Participating cities in the EU, with overview of size

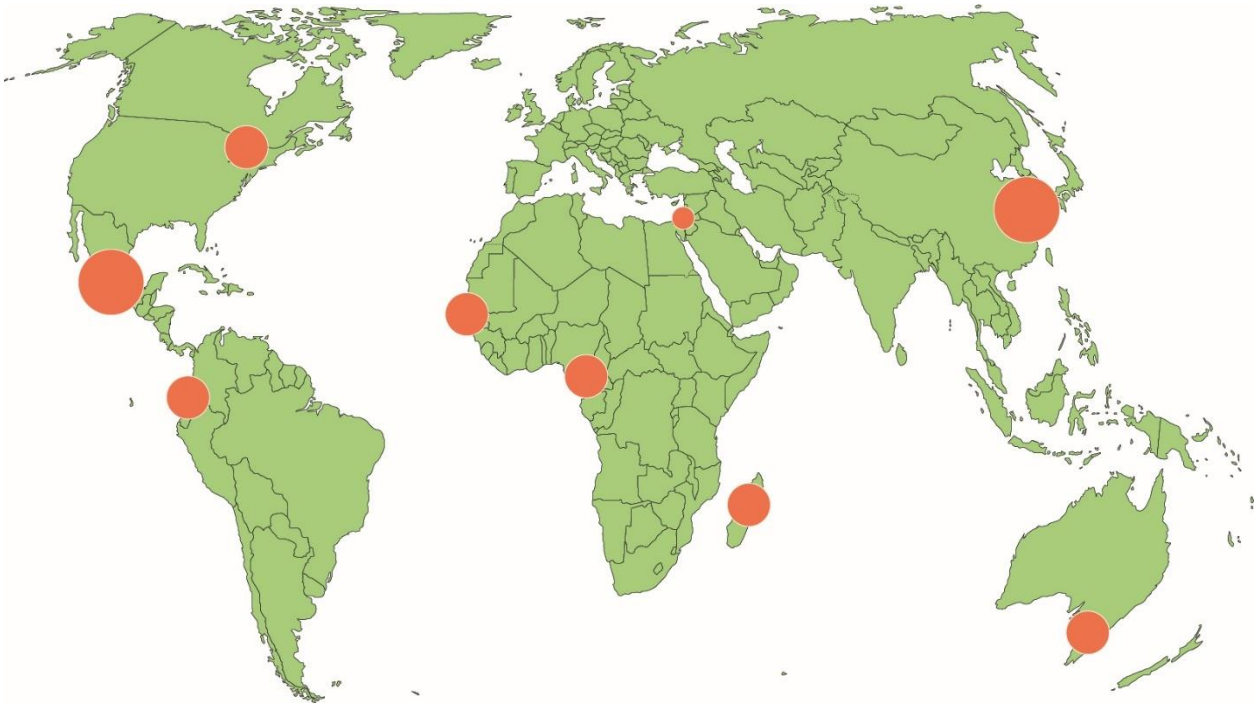


Figure 28 Participating cities from outside the EU/Europe

An 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.

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 "*Food 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.

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 consider 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?**

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

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

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 result 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. Food production & Food supply and distribution
4. Social and economic equity

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 result 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.

2. 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

3. 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.

4. 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.

How to obtain EU publications

Free publications:

- one copy:
  via EU Bookshop (http://bookshop.europa.eu);
- more than one copy or posters/maps:
  from the European Union's representations (http://ec.europa.eu/represent_en.htm);
  from the delegations in non-EU countries (http://eeas.europa.eu/delegations/index_en.htm);
  by contacting the Europe Direct service (http://europa.eu/europedirect/index_en.htm) or
  calling 00 800 6 7 8 9 10 11 (freephone number from anywhere in the EU) (*).

(*) The information given is free, as are most calls (though some operators, phone boxes or hotels may charge you).

Priced publications:

- via EU Bookshop (http://bookshop.europa.eu).

KI-NA-28-533-EN-N

Summary

This study offers an overview and understanding of food innovation in cities and the role that EU projects for research and innovation can play in supporting sustainable food systems.

While food has traditionally been considered beyond the competence of cities, several local authorities in Europe are now recognising the active role that they can play in supporting food strategies that are inclusive, resilient, safe and diverse.

Cities act as brokers, bringing together civil society, business, and research organisations in a creative space, where innovative solutions can be designed and implemented for a more sustainable food system. This holistic approach aims to scale-out and scale-up new methods. Accordingly, the main type of policy instruments used by cities are citizen's involvement and social innovation, new forms of governance across levels of government, public procurement, and collaboration with research.

In order to support cities and to deliver the greatest impact, European projects need to be aligned with the local political priorities. Project research questions and project implementation should be done in cooperation with local authorities and other relevant actors. Projects have stronger impact where cities have the possibility to learn and exchange with each other on successful good practices.

ISBN 978-92-79-66947-7

Publications Office