

Food Losses and Waste in European Cities



#EUFoodCities

#FoodWaste

#EUFoodWaste

The main aim of the document is to share an overview on ongoing actions about food losses and waste in European Cities for a better understanding of the practices and the role that local authorities can play to support them.

Working Document
DRAFT



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GLOSSARY

EXPO 2015 – Universal Exposition “Feeding the Planet. Energy for Life” Milan 2015

FLW – Food Losses and Waste

MUFPP – Milan Urban Food Policy Pact

RUAF – Rural Urban Agriculture Foundation

FAO – Food and Agriculture Organization

WG Food – EUROCITIES Working Group Food

C40 – Cities Climate Leadership Group

EU – European Union

MPA – Milan Pact Awards

DG RTD – European Commission General Direction on Research and Innovation

DG SANTE – European Commission General Direction on Health and Food Safety

CSOs – Civil Society Organizations

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Introduction

The aim of the present work is to elaborate an overview on the variety of practices that European cities are implementing to address Food Losses and Waste (FLW) issues. This document was discussed on 4th April 2018 in Amsterdam during the **EUROCITIES Working Group Food and Waste joint meeting**, at the EUROCITIES Environment Forum of, and shared with the European Commission through the EU Platform on Food Losses and Waste lead by **DG SANTE**. The purpose is to collect experiences and gather cities interested on these topics. The paper does not include any new research, it is a set of practices that the City of Milan, as **food knowledge hub**, collected through its local Food Policy and the Milan Urban Food Policy Pact.

The Municipality of Milan participates in several spaces of discussion and planning at several levels (from local to global), thus the Milan Food Policy is the result of a wide **knowledge mobilization**. Sharing this know-how and making it open and accessible will contribute to defining the innovative role of Milan on Food Losses and Waste, as a legacy of the **EXPO Milano 2015** devoted to the theme "Feeding the Planet, Energy for Life".

This working document consists of four main sections: the first contains general remarks and final conclusions from sources; the second is a collection of cities' practices; the last encompasses key European initiatives and urban networks focused on FLW actions.

A special attention is given to the case of Milan in the third part, where after EXPO 2015 and the adoption of the local Food Policy various actions have been launched at different scale (urban, metropolitan, regional, national) involving different actors (local authorities, social actors, private and academic sector).

It was possible to draft this document because the Food Policy Office of Milan has access to updated information on many activities in progress at EU level (Commission, research bodies and cities).

2 Cities as creative hub of innovation for Food Policy

For long time, actions on food system has been considered as beyond cities' competences, mainly because food production take place outside urban boundaries. Nowadays the recognition of the **crucial role of local authorities is growing**, especially considering their possibility to develop and manage sustainable food systems through the design and implementation of urban food policies.

Cities carry out their food related activities in many ways: some of them develop **comprehensive strategic documents** and long-term plans, while others work on sectorial policies and single actions. The long-term ambition for cities remains the definition of inclusive and sustainable policies.

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). Therefore, cities, particularly in Europe, have only recently started to **work on food issues** in a comprehensive way.

Only few **cities in Europe** and worldwide have developed comprehensive food policies and strategies and have a dedicated staff or offices able to work across sectors and to coordinate all possible areas of work related to food.

However, it is already possible to observe different forms of innovation in cities. Many cities have adopted an **innovative approach** in the development of more sustainable, inclusive, resilient, safe **City Region Food Systems**. These dynamics, the use of policy tools and the types of activities cities are implementing, are common across Europe and the world independently from their socio-economic context.

The main focus of food actions in European cities is the reconnection **between food producers and consumers**, among different local actors, between rural and urban areas. The role that cities see for themselves is that of designing different activities at local level, empowering different actors, encouraging connections and scaling up activities. **Urban food policies** aim to bring together civil societies, private sector, research organisations and public authorities with **crossectorial governance** approaches. These stakeholders act at different scale (local, metropolitan and regional) in a creative space, where **innovative solutions are designed and co-create** together.

Cities started to work on urban food policies around 2000. Some of these cities have acquired great knowledge in managing different aspects of food system. The **Working Group Food of EUROCITIES**, as European network of Milan Urban Food Policy Pact, was created in 2016 to promote **knowledge sharing and foster cooperation** among member cities.

(2016, Food in Cities study)

More information on the
EUROCITIES Working Group Food



http://www.eurocities.eu/eurocities/working_groups/Food&tpl=home



Member cities of Working Group Food

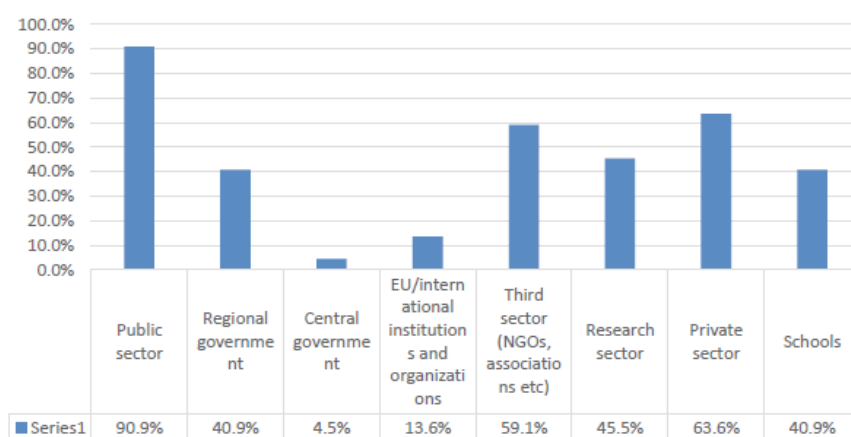
Overview on Food Losses and Waste actions in European cities

Actions on Food Waste reduction and Food Losses redistribution for food donation are a relatively new topic of interest for European cities. If food production is clearly related with agricultural departments, food distribution with market departments, waste with environmental departments and consumption with public purchases departments, Food Losses and Waste (FLW) actions are dealt with a new crosssectorial approach by local authorities. Several European cities, that are working on sustainable food systems, are focusing on FLW.

The "Food in Cities" study, covers in the FLW section the following activities: raising awareness on food loss and waste; saving food by facilitating the recovery and redistribution for human consumption of safe and nutritious foods; improving food waste management. In the study Eurocities, the City of Milan and Cardiff University made a survey among 21 European cities to analyze different issues of urban food systems. In the survey **explored the different kind of actors and policy instruments** used in FLW management.

Often the public sector plays a leading role on FLW reduction with innovative practices involving **several actors** and **different actions**. The **private sector**, as well as **civil society organizations**, are also very active. Collaboration is common with schools aiming at reducing food waste in canteens and promoting various awareness programmes.

Stakeholders engaged in Category 6: food waste



Types of stakeholders involved in food waste reduction. (Food in Cities study)

The city department in charge of actions in this area is the **Environment Department**, while municipalities with a systemic urban food policy handle the food waste reduction through their **food policy office**.

In the "Food in Cities" study (2016), cities were asked to identify what kind of policy instruments were used by local authorities to act against FLW.

A focus on **governance and citizens engagement** remain the preferred tools. Collaboration with research bodies is also important.

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 most significant actions are **raising awareness** on food waste reduction, preventing food waste through **food donation** and collecting **organic-biowaste for compost or biofuels**.

Many **voluntary actions** led by citizens and civil society organisations to prevent and reduce food waste. These actions are implemented with the support of **local authorities as facilitator of agreements** among different actors along the food system (schools, supermarkets, street markets, restaurants, universities, neighbourhoods, hotels, food banks, public agencies, waste plants, hospitals)

Actions aimed at food waste reduction are relatively new. Aside from various activities traditionally related with Food Policies and implemented by cities (e.g. markets, education, planning), food waste reduction is proving to be a new issue that can be tackled through Food Policies.

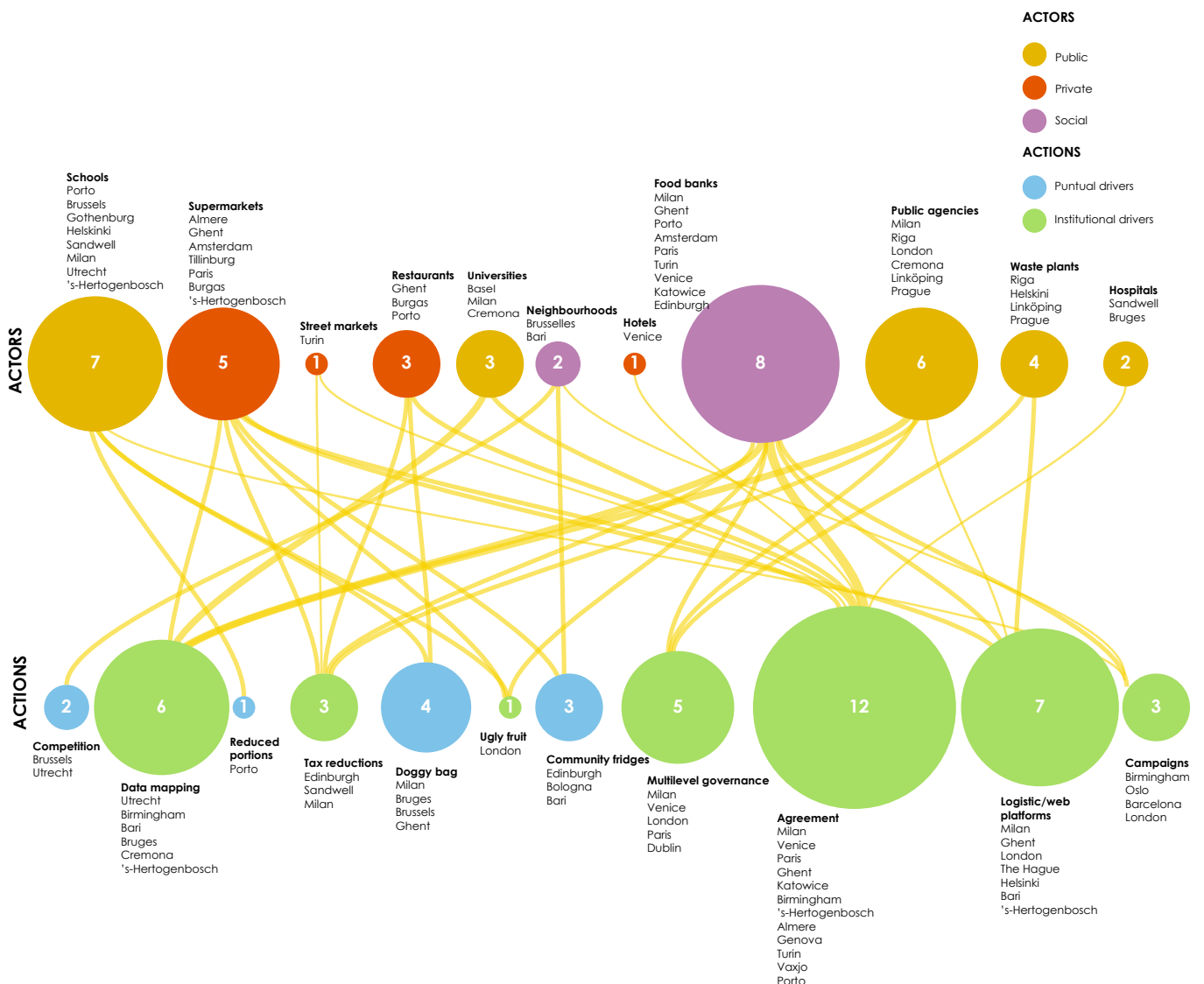
The main actions being implemented by cities are:

- 1. AGREEMENT** - Cities are facilitating the creation of relations among actors.
- 2. BIOGAS** - Many cities are working on the promotion of biogas and biowaste as recovery products of food waste. Issues regarding difficulties in separating waste collection in cities are a shared common challenge, especially for food.
- 3. DOGGY BAG** - Several simple actions from cities are possible for food recovery and promotion of solidarity activities: for example, the promotion of doggy bags in restaurants and even canteens, as in Milan, Ghent, Bruges, or collaboration with different associations for food waste prevention (as solidarity groups or citizen's group).
- 4. SCHOOLS** - To tackle FLW, it is necessary to encourage a behavioural change in the whole society. An important issue in food waste reduction is tied to school meals preparation. Often they are centrally produced and this doesn't allow to offer differentiated choices or adjust the portions. Yet the vegetables offered in schools, are often discarded, thus awareness raising programmes are really important.
- 5. ICT AND DATA MAPPING** - In many cities different ICT tools, such as apps to reduce food waste in restaurants are tested. Most cities still lack 'real' data on FLW, at the same time different cities are part of EU projects aimed at measuring these phenomenon.

6. **FISCAL POLICY** - Cities are testing tax reduction and incentives for private sector committed on food donation.
7. **MULTILEVEL GOVERNANCE** - New kind of relation among local, metropolitan, regional and national authorities are growing to better exploit different institutional drivers (funds, incentives, regulations, experiences).
8. **COMPETITION and CAMPAIGN** - Actors organize raising awareness initiatives to engage local communities and citizens.
9. **REDUCED PORTIONS and UGLY FRUIT** - Action in school canteens are undertaken to reduce the amount of food portions and promote the consumption of ugly fruit and vegetables.
10. **COMMUNITY FRIDGES** - In some cities civil society organizations are installing fridges where people can leave and take food losses and leftovers.

Relations among urban actors and actions

The image represents the connections among different kind of actions undertaken by European cities to reduce Food Losses and Waste and the actors involved.



30 cities working on food losses and waste

The table below illustrates the sources (reports, documents and studies) of the data and information reporting in this document and a summary of the different actors and actions implemented by 30 cities examined. Each case highlights one or several interrelated goals: raising awareness on private consumption, collecting biowaste for biofuel or compost, recovering food losses for donation.

The map gives an overview of the different geographical and thematic focus of FLW activities implemented in the 27 cities considered in the document. It is worth noting that many cities are committed to reach two or more goals at the same time.

Table and map will be updated after the discussion within EURO CITIES Working Group Food and Waste and other networks.

City	Country	SOURCES						ACTORS INVOLVED											ACTIONS											GOALS						
		MFA	WG Food	WG Food Waste meeting	MUFPP Selected Good Practices - ebook	Food and the Cities - book	FAO-RIAF Report	TRIFOAL Partnership	Schools	Supermarkets	Street Markets	Restaurants	Universities	Neighbourhoods	Hotels	Food Banks	Public Agencies	Public plants	Hospitals	Competition	Data mapping	Reduced portions	Tax reductions	Mashrooms	Doggy bag	Ugly fruit	Community Fridges	Project design	Multilevel governance	Agreements	Logistic/web platforms	Campaigns	Awareness on private consumption	Biowaste for biofuel	Biowaste for compost	Food losses for donation
Almere	Netherlands	X	X						1																				1						1	
Amsterdam	Netherlands			X							1				1																				1	
Athens	Greece	X	X																								1								1	
Barcelona	Spain						X																					1			1					
Bari	Italy	X											1							1						1	1			1					1	
Basel	Switzerland			X								1																1					1			
Birmingham	UK	X																		1								1		1		1			1	
Bologna	Italy		X																								1								1	
Bruges	Belgium	X																1		1				1			1					1			1	
Brussels	Belgium	X	X				X	1					1						1					1			1					1			1	
Burgas	Bulgaria						X		1		1																						1		1	
Cremona	Italy	X										1				1				1							1						1		1	
Dublin	Ireland						X																					1					1			
Edinburgh	UK		X												1						1						1								1	
Genova	Italy	X																										1		1			1		1	
Ghent	Belgium	X	X	X					1		1				1									1				1		1	1				1	
Gothenburg	Sweden		X	X				1																								1		1		
's-Hertogenb	Netherlands			X					1		1									1															1	
Helsinki	Sweden			X				1										1												1				1	1	
Linköping	Sweden						X									1	1																	1		
London	UK			X	X																				1		1	1		1	1	1	1	1		1
Lyon	France		X																														1			
Katowice	Poland			X											1																				1	
Malmo	Sweden				X																											1	1		1	
Milan	Italy	X		X	X	X		1				1			1	1					1		1				1	1	1	1		1		1	1	
Oslo	Norway			X			X											1														1		1		
Paris	France			X	X				1						1														1	1			1		1	
Prague	Czech Rep			X				1									1	1																1		
Porto	Portugal	X		X				1				1			1						1								1			1			1	
Riga	Latvia	X															1	1																	1	
Sandwell	UK		X					1											1				1													
Sofia	Bulgaria						X																									1		1		
The Hague	Netherlands			X																										1					1	
Tillinburg	Netherlands			X							1												1									1				
Turin	Italy	X	X		X					1					1															1					1	
Utrecht	Netherlands		X	X				1											1	1								1				1				
Vaxjo	Sweden						X																													
Venice	Italy	X	X										1	1														1	1	1					1	
								8	5	1	6	3	2	1	9	6	5	2	2	6	1	3	1	4	1	3	13	5	11	7	4	18	1	11	22	

38 cities mapped
with 41 actions observed

26 cities active in FLW
and member of WG Food

12 cities active in FLW
not member of WG Food

LEGEND

• 51 EUROCIITIES Working Group Food

● 18 Food Losses Donation

● 1 Biowaste for Biofuel

● 11 Biowaste for Compost

○ 22 Awareness actions

Almere
Bari
Ghent
Turin
Venice
Bologna
Edinburgh

Food donation
7

Milan
Compost
4

Athens
Riga
Linköping
Burgas

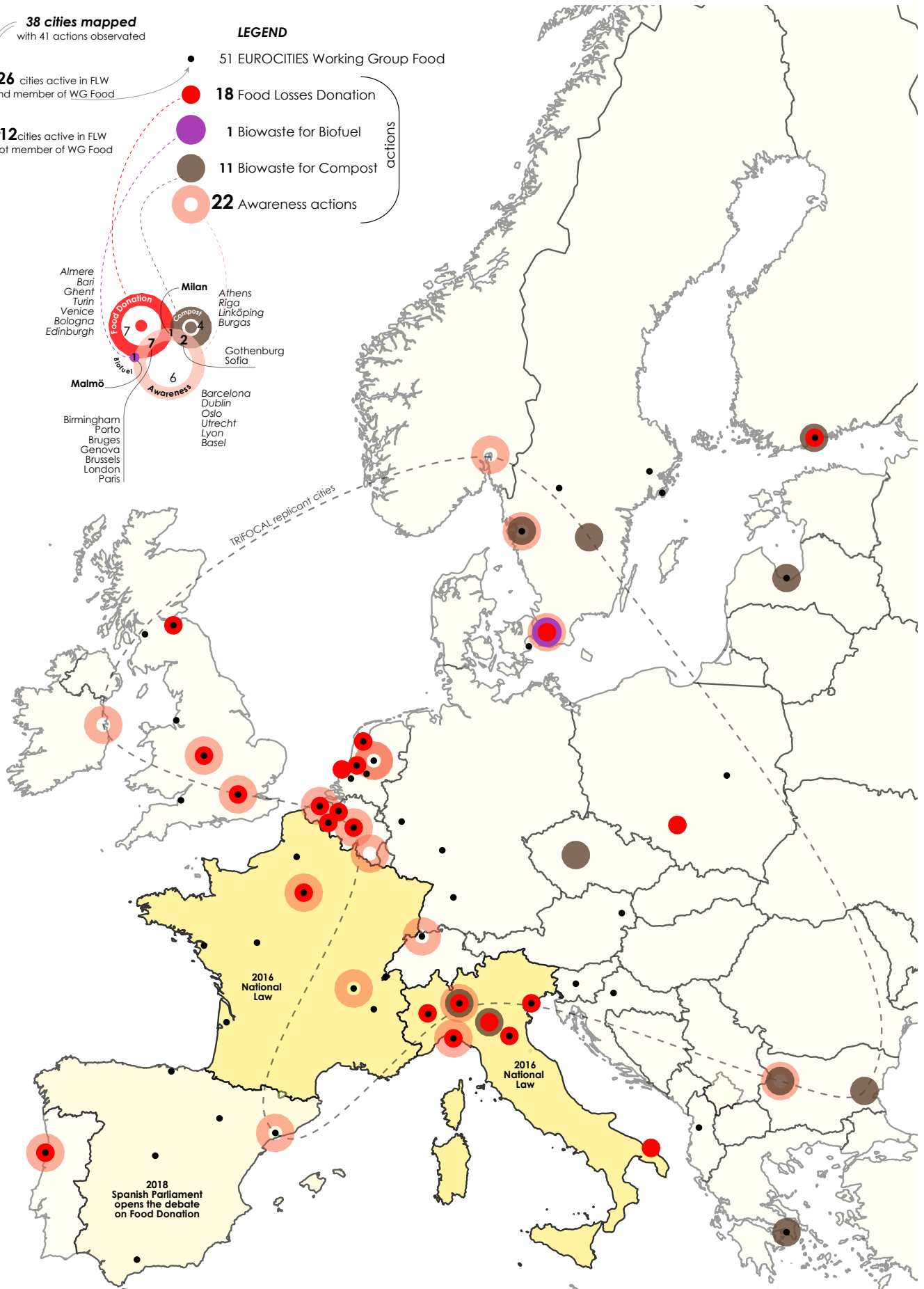
Gothenburg
Sofia

Malmö
Awareness
6

Barcelona
Dublin
Oslo
Utrecht
Lyon
Basel

Birmingham
Porto
Bruges
Genova
Brussels
London
Paris

TRIFOCAI replicant cities



3 European urban case studies

ALMERE

The Municipality of Almere is actively working to cut food waste and losses by connecting different actors of the food chain, emphasizing the role of super markets in tackling the zero food waste challenge. Over 2016-2017, the municipality founded a coalition of non-profit and profit organizations that aims to reduce food waste and help people in need by: collecting fresh and healthy food food losses from supermarkets, restaurants, etc; transporting it to the non-profit coalition partners, who have professional kitchens and cool storage; professional cooks, volunteers and the beneficiaries prepare healthy meals together and deliver them to distribution points. (MPA 2017) <https://goo.gl/JnB1Xq>

The City of Almere has also initiated a project called 'City without waste' to drastically cut waste production. The scheme invites supermarkets to re-use or donate over 10.000 kg of food losses annually. There are also plans to establish social markets.

The aim of the city is to reduce the annual total food waste from a family household from 180kg to just 50kg. (Birmingham meeting)

ATHENS

In 2013, the Municipality of Athens was the first place in Greece that started to divert biodegradable municipal waste from landfills and to require separate collection and treatment of biowaste. The new practice was called Athens Biowaste Programme and the main goal was the composting of biowaste for the production of high quality materials and the diversion of waste from landfills. This had various advantages: the avoidance of landfill costs, the reduction of greenhouse gas emissions and the production of compost which can be used in green areas, among others. (MPA)

http://www.c40.org/case_studies/athens-biowaste-programme

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 is finished, but the actions and best practices are being carried on. (Birmingham meeting)

BARCELONA

In recent years, the City Council's Environment department and the Barcelona Municipal Markets Institute have carried out multiple actions aimed at reducing food waste, at strategic level, with the city's waste prevention plan, and also implementing communications campaigns in their wide network of local markets. The municipality is strongly implementing communication campaigns, in order to make people more aware on these issues. The Barcelona Institute of markets is therefore developing a number of initiatives addressing food waste with an integrated approach. Barcelona is particularly interested in adopting parts of the FLW campaign linked to sustainable eating, schools and business engagement. (TRiFOCAL)

BARI

Avanzi Popolo 2.0 project is managed by the volunteering association "Farina 080" Onlus, that aims to activate Bari citizens against food waste. The main activities are: managing the food sharing web-platform <http://www.avanzipopolo.it/> where anybody can post information on food not consumed at home; saving food that risks to be wasted; managing the installation of community fridges and public social store in suburbs where needy families can buy food through a virtual money; educating, training and making advocacy about food waste. The project aims to enable people initiative to grow, by managing the logistics of a new web platform. (2017 MPA)

BASEL

In 2012 the University of Basel created its own Sustainability Office with the goal to introduce sustainability in teaching, research, outreach as well as campus management and operations. The University decided for an integrative approach and considers the campus as a Living Lab that gives students as well as staff the opportunity to experience sustainability. Several activities of the sustainability office feed into this approach. The Living Lab implemented several actions for the development of the concept of sustainability and sustainable catering at the University. The implementation started in spring 2013, the program for the canteens encompasses aspects like sustainable purchasing, increase vegetarian and vegan meals, reducing and preventions food waste, reduction of energy expenditure during cooking and in the canteen facilities. (MUFPP Good Practices ebook)

Concept for Sustainable Catering at the University of Basel: https://sustainability.unibas.ch/fileadmin/nachhaltigkeit/user_upload/redaktion/Bilder_Klimagenuss/Massnahmenplan_nachhaltige_verpflegung.pdf
Student projects on waste <https://sustainability.unibas.ch/en/projects/boost/2014-15-beste-reste/> - <http://www.refiller.ch/unibas/> - <http://foodwaste.ch>

BIRMINGHAM

The Birmingham Food Council is a Community Interested Company working to secure affordable access to safe, tasty, healthy food for this and future generations in the city through various campaigns. Love Food Hate Waste Campaign (LFHW) is WRAPs consumer campaign that was successfully launched in London in 2007 and later extended to ten UK cities, including Birmingham. The main aims of 18 months campaign, which started in July 2014 were: encourage individuals to reduce food waste, to offer free training on reducing food waste and to provide cookery classes, budgeting and kitchen skills. Courtauld Commitment is a voluntary agreement between Government and the food industry, brokered by WRAP to reduce food and food packaging waste from households and the supply chain. Hospitality and Food Service Agreement is a voluntary agreement brokered by WRAP to reduce waste and increase recycling in the HaFS sector. Signatories make specific waste reduction pledges and receive support and information on how to achieve this. (MPA) http://www.birminghamfoodcouncil.org/wp-content/uploads/2015/01/Food-waste-the-city_InterimReport_Dec2014.pdf

In Birmingham, there are no statistics, on the different type of waste available in the city, but neighbourhoods 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. (Birmingham meeting)

BOLOGNA

In Bologna an initiative known as the 'Community fridge experience' is being developed. Citizens took matters to fight food waste: it all works using a common WhatsApp group, gathering people from the same building and or from the same neighbourhood; through the instant messaging app anybody can communicate with other people and share the food they cannot consume. This a citizen led initiative fights food losses and waste through the donation of surplus food from households, where the majority of food is thrown away. (Birmingham meeting)

BRUGES

The city of Bruges wants to develop solutions to food waste in health care institutions by using an innovative and participatory approach. Main activities are 1) Measure and analyze current food waste and its economic impact in four health care institutions; 2) Support and coaching them in reducing food waste; 3) raise awareness among health care institutions, its impact and solutions to it. Four institutions are actively involved in this project: hospitals Saint Jan, Saint Lucas, the catering operator Riddersstove and the day center De Kade. The solutions are transferred to other health care institutions in Bruges and the region of Flanders. (2017 MPA) <https://goo.gl/K743HQ>

BRUSSELS

Active for several years in food waste prevention at local and European levels (e.g. Greencook, URBACT), Brussels Environment launched its 5-year Good Food Culture strategy in early 2016. One of the specific challenges addressed in this strategy is the reduction of food waste at source. It will promote urban and peri-urban agriculture, accelerate the transition of canteens and restaurants towards a more sustainable offering and educate the city's residents on sustainable food practices to encourage lasting behaviour change. Another initiative was launched in early 2016 to reduce food waste by encouraging diners to take their leftovers home in a rest-o-pack (doggy bag) box. Brussels Environment is therefore particularly keen to replicate some aspects of TRIFOCAAL in order to reach schools and public local administrations in the Brussels Capital Region and has a strong interest in the communication aspects that lead to an actual action and change of behaviour. (TRIFOCAAL) <http://www.goodfood.brussels/fr>
Brussels has also 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. (Birmingham meeting)

BURGAS

Burgas is pioneering the green agenda in Eastern Europe, in particular in Bulgaria. In 2014, the municipality introduced new local regulations for waste management, including the separate collection of bio-waste in restaurants and large supermarkets. Tackling supermarkets and restaurants waste the impact may have a knock-on effect for the city. As part of the TRIFOCAAL Steering Group, Burgas aims to introduce food waste prevention measures in the city that can effectively complement their food waste recycling efforts. (TRIFOCAAL)

CREMONA

Cremona lead the project UrbanWINS (Horizon2020) that will study how cities consume resources and products, and how they eliminate the waste produced, in order to develop and test innovative plans and solutions aimed at improving waste prevention and management. Launched in June 2016, the project will analyse current strategies for waste prevention and management in a total of 24 cities and assess how they contribute towards resilience, circular economy and resource efficiency. Particular attention will be paid to the management of food waste towards food donations. The project will follow the urban metabolism approach, in which cities are considered living organisms that use natural resources and create a flow of materials and energies.

<https://www.urbanwins.eu/the-project/>

DUBLIN

The Eastern - Midlands Regional Waste Management Plan 2015-2021 supports Dublin's transition to a circular economy and provides policy direction on prevention and management of waste. The plan has three key targets to reduce overall household waste, increase recycling rates for municipal waste and reduce the direct disposal of unprocessed residual municipal waste. The Eastern Midlands Regional Waste Management Plan and the local authorities in the region run a range of environmental education and awareness programmes that also link in with other environmental awareness programmes such as Green Schools, Green Campus, Green Communities and Stop FoodWaste. The action to reduce food waste is gathering momentum in Ireland and the aim is become a world leader in tackling food waste - benefitting the environment and aligning with our ambitions to become the Green Food Island. As the largest population centre in Ireland, Dublin is leading the way on food waste prevention and on the diversion of food and other organic waste from landfill. www.emwr.ie (TRiFOCAL)

EDINBURGH

In Edinburgh the new Scottish policy of 'zero waste' aims to enable 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. (Birmingham meeting)

GENOA

Started in 2016, the [RICIBO project](#) aims at the municipal recovery and redistribution of food surpluses with solidarity purposes, with the goal of coordinating all existing projects and practices. For Genoa, the aim is to become a zero waste city. Specific objectives are: 1) to facilitate the connection and collaboration among public bodies, non-profit organizations and donor companies and to systematize good practices; 2) to use technology support tools to increase food surplus recovery and improve storage and redistribution ; 3) to let citizens known the virtuous projects already existing on the territory and to make them aware of fight against food waste. The strength of RICIBO lays in the systemic approach, that works at the same time on governance, logistics and communication of actions. (2017 MPA)

GHENT

The City of Ghent and the social welfare department decided to launch a logistic platform to better match offer and demand of food leftovers. This process took about 2 years of discussions and research. In March 2017 the [Foodsavers platform](#) was launched, bringing together food leftovers from the wholesale market and the local retailers and redistributes them to social organizations in Ghent. The organizations are a mix of food banks, social restaurants and social supermarkets. The goal is to avoid at least 100 tons of food being wasted in 2017. After 3 months the first results are very promising. 38 tons of food have been recovered and have been redistributed (about 4 tons of food leftovers/week). (2017 MPA)

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'. (Birmingham meeting)

GOTHENBURG

The municipality of Gothenburg activated the collection of food waste from residents. The city manage its food waste to make biogas and the energy obtained is used as fuel for the transport network. The 'Gothenburg model for food waste' is being implemented and it involves disseminating ideas in public schools, elderly homes along with educational information for teachers and kitchen staff in order to increase awareness. (Birmingham meeting)

'S-HERTOGENBOSCH

12 organisations in 's-Hertogenbosch and its Region have signed an agreement on reducing food waste for the next 3 years (3 supermarkets, 2 schools, a caterer, the Grow Campus (intermediary) and the company NoFoodWasted). The city of 's-Hertogenbosch supports the initiative.

NoFoodWasted has develop an app "marked down" that shows customers in which supermarket they can buy goods at a lower price because they are close to their date of expiry. This leads to less throwing away of products. Already over 40000 people actively use the app and their number is growing day by day. With the restaurants and other partners 's-Hertogenbosch will become a living lab for 3 years in experimenting with new options in the app.

Already 40000 people actively use the app to buy goods at the supermarkets. In 3 years time we hope to at least triple the number of supermarkets and restaurants that participate. (Amsterdam meeting)

LINKÖPING

Linköping Biogas AB was formed in 1995 as a result of co-operation between the City of Linköping, the local abattoir and the farmers' association. It built a Linköping Waste-to-Energy (WTE) plant that uses organic waste from agriculture and slaughterhouses for the production of biogas for fuelling the city's public transport system. Aggregation of rural and urban waste production is needed to ensure sufficient waste volumes and efficiency of the biogas plant. Products are used in rural areas (bio- fertiliser) and urban areas (biogas), thus connecting rural and urban areas, enhancing agricultural sustainability and improving the environment for Linköping's citizens. Prevention and reduction of food waste is included in the Swedish Waste Prevention Programme, the Swedish environmental policy and the Swedish Waste Management Plan (2012-2017). (FAO RUAF)

LONDON

The Gleaning Network UK was launched in 2012. It currently operates in five gleaning hubs across the country. Each gleaning hub has a coordinator supporting the local volunteers, farmers and food redistribution charities. Their activities include: saving fresh fruit and vegetables that are rejected by retailers for cosmetic reasons and transport them to charities helping the most vulnerable members of society; a social function, in providing fresh fruit and vegetables to those in need; volunteers from cities have the chance to (re)connect with the countryside. In less than 3 years, Gleaning Network UK has been able to recover and redistribute 130 tonnes of fresh fruit and vegetables that would otherwise have been wasted. (MUFPP Good Practices ebook) <http://feedbackglobal.org/campaigns/gleaning-network/>

The Food Save program brings together more than 200 small and mid-sized businesses in the London food sector to avoid food waste and put surplus inventory to economically advantageous use by redirecting it for human consumption wherever possible, or for animals, composting, and the production of energy, depending on its potential for re-use. The ultimate goal is to avoid sending any food waste to landfills. The initiative is financed by the European Fund for Regional Development, the London Waste and Recycling Board, and the office of the Mayor of London. The program works by bringing together experts to help businesses identify the best strategy for them to re-use, and engages shopkeepers, food carts, farmers' markets, food producers, wholesalers, and growers. The program aims to re-use 1,000 tons of food waste that regularly ends up in landfill and to reduce by 150 tons the amount of food waste tied to food packaging. (Food and the Cities)

MALMÖ

The city of Malmö, since the launch of its food policy in 2014, has declared its intention to reduce food waste locally and at the source through an awareness campaign to promote the proper use of food and also to make use of non-eliminable waste through the production of biogas. As of 2014, all residents of Malmö have been provided with waste grinders to recycle organic waste, which is then gathered and destined for the production of bio fuels, in turn used throughout the city to run its buses, garbage trucks, taxis, and cars. The entire bus fleet has been designed to run on gaseous forms of energy and, currently, the city disposes of roughly 200 buses that use biogas or methane. The city has also developed a complete district heating system, and a great portion of Malmö's heating energy – estimated at around 60% – comes from recycled wastes. (Food and the Cities)

OSLO

Oslo has a well-established system of food waste separation for all its citizens and is very interested in developing new campaigns on food waste prevention, in line with their newly approved municipal waste management strategy. At European level, Oslo currently chair the EURO CITIES' working group on waste management, an influential group of large European cities that contributes the city perspective to European policy initiatives on prevention and recycling of waste and promotes the exchange of best practice on municipal waste management. As part of the TRIFOAL Steering Group, Oslo is particularly keen to look into the benefits of combining messages on food waste prevention and recycling. (TRIFOAL)

PARIS – RECOVERY AND REDISTRIBUTION OF SAFE AND NUTRITIOUS FOOD TO PEOPLE IN NEED

Food waste reduction has become one of the main goals of the Paris Plan for the development of sustainable food. In addition to raising awareness on reducing food waste, the City of Paris supports concrete community projects for recovery and redistribution of safe and nutritious food.

One example is the collaboration with the markets in Joinville, the 19th arrondissement of Paris. Donations from 500 to 1,200 kg of fruit and vegetables are collected from merchants each Sunday. This action is carried out by the association “Gleaners’ tent” that verifies the quality before redistributing it. The Paris municipality supports this action by providing logistical and organisational support to the association. The success of this action is linked to the joint effort of the actors involved: local authorities, private sector and civil society. Early results indicate there is a huge potential for safe and nutritious food recovery and redistribution to people in need.

Official website of the practice (French only): <https://fr-fr.facebook.com/LaTenteDesGlaneursParis>

City action plan for sustainable food: <https://api-site.paris.fr/images/73606> (French only) (MUFPP Good Practices ebook)

PORTO

In 2016 the AGAVI association (association for the Portuguese gastronomy and wines promotion) launched the Não me lixes campaign. The association chose to give visibility to the issue of food waste, starting its activities in the city of Porto. The first step of the campaign was a night event in the restaurant of José Cordeiro, a local chef that committed himself in reusing kitchen waste to cook new meals. The campaign went on mainly trying to make people aware of the issue, in order to improve collective conscience and better people habits. (MPA) <http://www.agavi.pt/actuais/>

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 (e.g. younger children should get less food), increasing awareness while reducing the possibility of food waste. (Birmingham meeting)

RIGA

The municipality of Riga is the major stakeholder of the Getliņi EKO company. About 300'000 tons of waste/year, of which 41,50% is waste biomass, is transported to Getliņi, an environmentally friendly, high-tech ecological waste management company. When disposed, food waste creates landfill gas that is channeled to the Getliņi power unit and transformed into energy (in 2015 33'718'200 kWh) and heat, used for heating greenhouses for growing tomatoes (390 tons/year). Thanks to this, there are 2000m³ environmentally harmful gases per hour less in the atmosphere. The company is also organizing free field trips to landfill. (2016 MPA) <http://www.getlini.lv/en/getli%C5%86i-numbers>

SOFIA

As a local authority Sofia Municipality is responsible for waste management on its territory. According to the Waste Management Programme of Sofia Municipality 2015-2020 adopted by Sofia City Council one of the main objectives of the programme is reducing the quantity of landfilled biodegradable waste. In addition to this objective, a new Ordinance for the separate collection and treatment of bio-waste was accepted in January, 2017. The Ordinance requires Mayors in each of the waste management regions of Bulgaria to introduce new measures for separate collection and treatment of bio-waste including extension of the system for separate collection of bio-waste and raising the awareness of the population for the benefits of separate collection and treatment of bio-waste. (TRIFOCAI)

TURIN

The municipality developed, with a private partner Novamont Spa, a project to introduce an innovative system to facilitated collection and separation of food waste in the city's largest municipal market. The system consists in the distribution to produce vendors of carts specially designed for food waste collection in the tight spaces of open air markets. In addition to the facilitation of the collection of food waste, Eco dalle Città also enlisted a cohort of volunteers, including numerous asylum seekers, to address the phenomenon of scavenging in the market and make unsold food available in a dignified manner. (2017 MPA)

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. (Birmingham meeting)


Soup kitchens are a service that aims to guarantee the right of access to food for the most vulnerable people in our community. They are created and thrive thanks to the spirit of solidarity of thousands of volunteers and non-profit associations. The soup kitchens obtain the food from different sources: food banks, retailers that donate food close to its expiry date, or the City of Turin that provides food based on previous agreement and demand.

<http://www.comune.torino.it/assistenzaesanita/> (Italian only)

<http://www.fabene.org/progetto/>

UTRECHT

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.



(Birmingham meeting) In addition, within the Living Lab Smart and Healthy Cities a collaboration between the ministry of infrastructure and environment, province Utrecht en the municipality Utrecht a project on circular economy and the re-use of coffee waste as executed. An interdisciplinary student team investigated the potential of re-using coffee waste for growing oyster mushrooms in the train station area of Utrecht and developed a business case.

The goal of the project was to stimulate and facilitate local entrepreneurs interested in this topic and organise exchange between different stakeholders. The student team interview different stakeholders in the chain, from waste collectors to mushroom growers. In the end of the project a multi-stakeholder meeting was organised to present the results. The student project had a duration of 10 weeks.

The multi-stakeholder meeting contributed to expansion of the network. This project was used as a tool to expand the topic of food waste within the municipality itself to civil servants of the spatial department.

After the project, the municipality has agreed to experiment in coffee waste separation and re-using it with local entrepreneurs.

VENICE

"Food Surplus Recovery" ([R.E.S.A.](#)) project started from the simple idea that a lot of meals served to the guests in the hotel end up in the trash while it could be served again in soup kitchens and food hubs in town. The management of Novohotel in Venice thanks to the national law 166/2016 can donate the meals not consumed to the "Fondazione Casa dell'Ospitalità" for their internal soup kitchen and to food hubs. People hired for the delivery service are mostly homeless and unemployed persons included in the local welfare system. The next step in the project will be the involvement of more hotels and restaurants to rise up the quantity of food distributed within food hubs and soup kitchens in town, in order to increase the number of disadvantaged citizens working in the food chain distribution. (2017 MPA)

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

Växjö

Växjö has specific goals on food waste reduction and is already involved in a number of food waste prevention and recycling initiatives,

Sources

The following sources were used to elaborate this working document:

- **Study - “Food in Cities”** Study on innovation for a sustainable and healthy production, delivery and consumption of food in European cities. Tendered by DG RTD. Delivered by EUROCITIES, City of Milan, Cardiff University. Code 30-CE-0833121/00-49 and **Report - Minutes of the EUROCITIES WG Food Birmingham** meeting 8-10 February focus group on “Cities food innovation” <http://www.eurocities.eu/eurocities/documents/Food-in-cities-mapping-cities-activities-in-the-area-of-food-WSPO-APKDAZ>
- **Milan Pact Awards** - Practices of European cities collected through the 2016 and 2017 editions of the Milan Pact Awards, under the category “Food Waste” <http://www.milanurbanfoodpolicypact.org/award/>
- **E-Book - (2015) “Milan Urban Food Policy Pact. Selected Good Practices from Cities”** Ed. Fondazione Giangiacomo Feltrinelli. E-book companion guidance document to the Milan Urban Food Policy Pact including the Framework for Action <http://www.milanurbanfoodpolicypact.org/good-practices/>
- **Study FAO-RUAF-GIZ (2016) “Food Waste Management”** Study on City Region Food Systems and Food Waste Management, with focus on rural-urban linkages http://www.ruaf.org/sites/default/files/2016_GIZ%2CFAO%2CRUAF_CityRegionFoodSystems%20and%20FoodWasteManagement_digital.pdf
- **Project - Partnership of TRiFOCAL Life+ Project** for the development of innovative approaches to prevent food waste by changing planning, spending, storage and preparation of meals <http://trifocal.eu.com/project-resources/work-across-the-eu/>
- **Book - ESià (2015) “Food and the Cities”** Edizioni Ambiente. Book published in Milan after the International Analysis of Food Policies cases inside the Milan Food Policy definition process . <http://www.edizioniambiente.it/libri/1085/food-and-the-cities/>

4 Milan experiences on Food Losses and Waste management

The City of Milan developed in 2015 the Milan Food Policy that act on food system in a multidimensional approach around five key priorities: Food Losses and Waste reduction is one of the most important.

Tax reduction on food losses for donation

In 2018 Milan adopted for a waste tax reduction for Food Losses donation. The new regulation aims to reduce 20% of the tax per year for food businesses (markets, restaurants, private and school canteens, etc) that donate food losses to charities. This action involves different departments of the municipality (Fiscal, Environmental, Food Policy Dpts), creating a multisectorial working group. The measure will support the mapping, strenghtening and spreading of food donation ongoing initiatives in city.

Local Food Waste Hub

The municipality facilitated an agreement between university (model management and data analysis) and a private sector association (that gathers supermarkets and companies with canteens) to develop a pilot project in three neighbourhoods for food losses redistribution at the local level. The Milan Municipality offered a space to host this "Local Food Waste Hub".

Multilevel governance with Regional authority

Milan Food Policy is part of the stakeholder group of INTERREG CircE (lead by Regional authority) about circular economy on food waste. The project focuses on developing new competences and new urban and regional policy instruments to promote circular economy. CircE gather several stakeholders among private sector clusters, research bodies, local authorities to explore new kind of incentives.

Raising awareness campaigns

In order to prevent the fruit waste at the end of each lunch, the municipal agency for school canteens designed a program called "Morning break with fruit": children receive in their classrooms fruit, previously served at the end of lunch, as a morning snack. In addition to this preventive action, 31.000 doggy bag were given to children to bring home non perishable leftovers.

31.000 Doggy Bag

85 pilot schools
(fruit, bread, non perishable leftovers)

Collecting biowaste for compost and biogas

From 2013 the separate biowaste collection is active in every neighbourhood of Milan. The organic waste is used to create compost for periurban agriculture and biogas for enegy production.

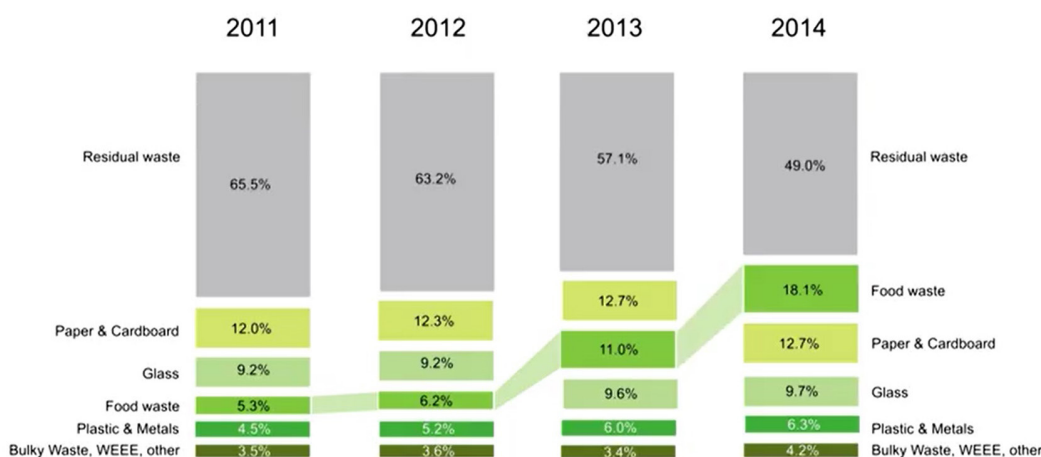
-17% food waste in school meals

"Morning break with fruit"
57 schools
779 classromms
17.000 children
(28% of total)

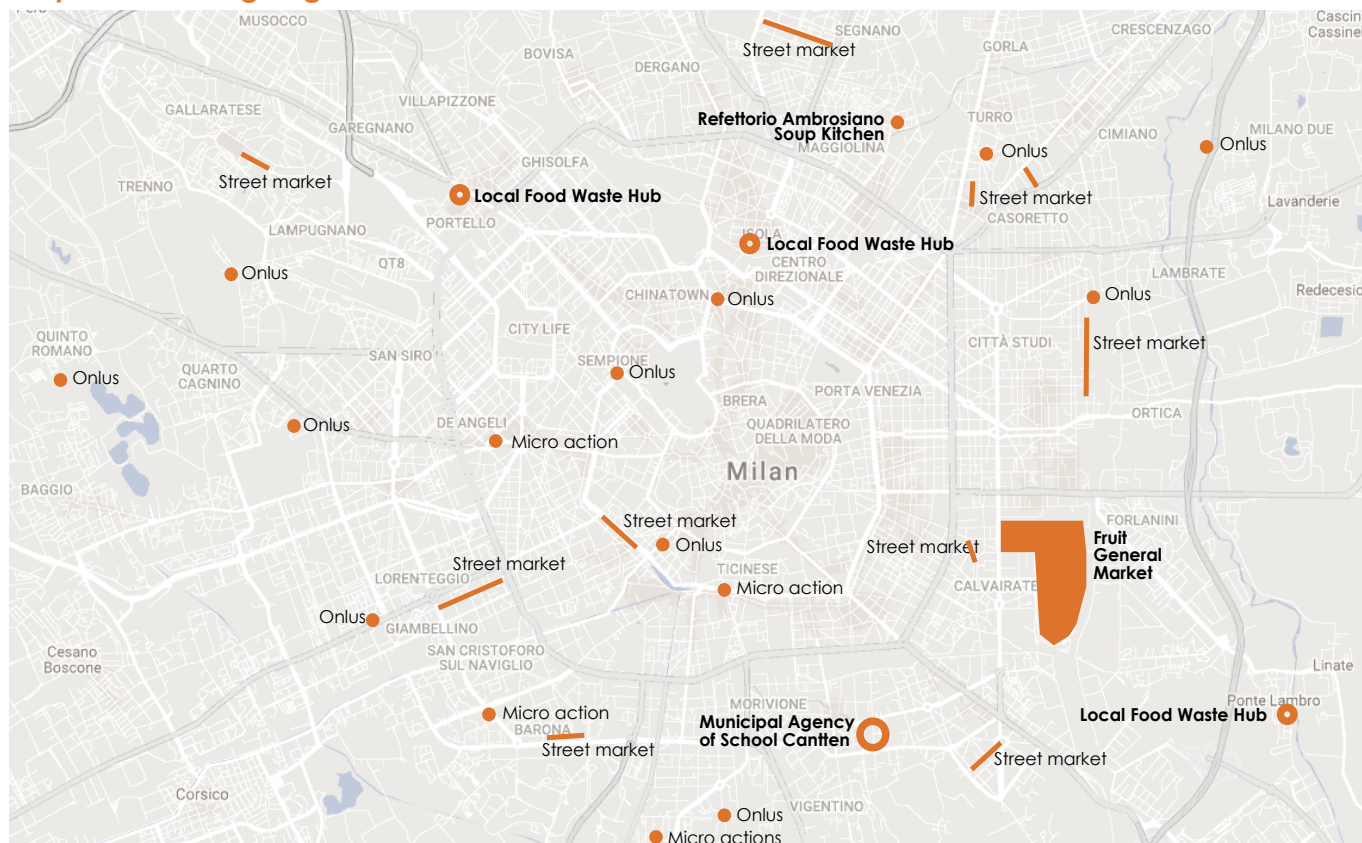
51% Milan separate waste collection

Organic waste collected for compost
1,7 kg/person per week
90 kg/person per year

AMSA Municipal waste management company with Novamont technical support.



Map of Milan ongoing FLW activities



Institutional policy tools and drivers

EU Platform for Food Losses and Waste DG SANTE

EU Guidelines for Food Donation
Spreading the knowledge
Refresh Community of Expert

Food Waste National Law 166/2016
introduction of the possibility
of Tax Reduction at Municipal level

Lombardy Region DG Environment

- Agreement with Distributors
- Food Donation Fund
- INTERREG Circe

Food Losses redistribution

Waste Tax reduction
20% for food businesses
Agreement with University
and Private Sector association

Prevention and Education

Morning break with fruit
31.000 doggy bag

Circular Economy

Biowaste for Compost and Biogas

Milan Food Policy

4th priority
Fight Food Waste

51 European Cities

Eurocities WG Food

19 Italian Cities

MUFPP

3 Local Food Waste Hub

250 kg / day = 70 T / year

Refettorio Ambrosiano

Soup Kitchen 90 meat / day
87 volunteers = 15 T / year

Recup 11 Street Market

120kg/market/week = 73 T / year

Ciessevi Local Actions Mapping

map and support of micro action

Regional Authority Against Waste

16 Municipalities, 11 non profit
9 supermarkets, consumer associations
830 T (2015) 9 supermarkets in Milan

Banco Alimentare - Food Bank

in Milan 3.492 T / year
249 private sector operators

Fondazione Lombardia per l'Ambiente local research action

in Milan 5-10 kg food waste / mq / year
20-30 € / mq / year

Fruit General Market

donation to Food Bank 424 Ton (2016)

76 School Canteens

50 T bread - 91 T fruit
31.000 doggy bag

5 actions in metropolitan area

Canegrate, Opera, Abbiategrasso,
Cernusco, Cinisello

TRIFOCA London

Milan Replicant City - Campaign

5 Main European Commission initiatives, database, networks active with cities FLW

EU Platform for Food Losses and Waste FLW

The EU Platform on Food Losses and Food Waste was created by DG SANTE and it is chaired by EU Commissioner Vytenis Andriukaitis. The new platform gathers the European Commission (through its DG SANTE presidency and DG RTD, DG REGIO, DG ENVI, DG AGRI active participation), 27 Member States and the private sector. Food waste prevention is an integral part of the Commission's new Circular Economy Package and the platform is involving both Member States and private actors in the food chain in order to help define measures needed to achieve the food waste SDG, facilitate inter-sector co-operation, and share best practice and results achieved. In 2017 the Platform worked to define Eu Guidelines for Food Donation, in 2018 it will promote sharing experiences and circular economy actions.

https://ec.europa.eu/food/safety/food_waste/eu_actions/eu-platform_en



European Commission

EU Food2030

Food 2030 is a timely EU research and innovation policy response to the recent international policy developments including the SDGs and COP21 commitments; it was launched after the 2015 Milan World Expo, when Commissioner for Research and Innovation, Carlos Moedas, announced his intention to launch a Food Research Area by World Food Day 2016. Food2030 is a platform for European dialogue, with the aim of creating a coherent policy framework on research and innovation for food and nutrition security. It is a cross-cutting initiative managed by DG RTD, where the Municipality of Milan and the Cariplo Foundation are very active on integrated themes. The initiative is rooted in the principles of Responsible Research and Innovation (RRI) and articulates actions on 4 objectives: NUTRITION for sustainable and healthy diets, CLIMATE smart and environmentally sustainable food systems, CIRCULARITY and resource efficiency of food systems, INNOVATION and empowerment of communities.

<https://ec.europa.eu/research/bioeconomy/index.cfm?pg=policy&lib=food2030>



Refresh Community of Expert

The Refresh Community of Experts was initiated as part of the Horizon 2020 funded research project REFRESH (2015-19). The original purpose of the site www.refreshcoe.eu was to provide a platform on which to share expertise and best practice, enabling the replication of the Framework for Action approach being piloted in the project. In 2017 the REFRESH project and DG SANTE identified an opportunity to collaborate and use this site as a key knowledge sharing platform for the EU Platform on Food Losses and Food Waste (FLW). The EU and Member States are committed to meeting the Sustainable Development Goals (SDG), adopted in September 2015, including a target to halve per capita food waste at the retail and consumer level by 2030, and reduce food losses along the food production and supply chains.

<http://www.refreshcoe.eu>





Milan Urban Food Policy Pact - MPA Awards

The Milan Urban Food Policy Pact is the main legacy of 2015 EXPO Milan. The Pact is a global commitment of mayors from around the world that considers food as an entry point for the sustainable development of growing cities. It represents the main framework for cities and international stakeholders active in the definition of innovative urban food policies for the management and governance of local food systems. Signatory cities gather once a year and it is an opportunity to meet, exchange knowledge and practices, participate in technical workshops, share progresses and build partnerships. Milan Pact Awards (MPA) were launched in 2016 thanks to the support of Fondazione Cariplo. The two editions of the MPA (2016 and 2017) collected 106 practices on urban food policies developed worldwide. The goal of the prizes is to share the winning practices among Milan Pact cities. www.milanurbanfoodpolicypact.org



EUROCITIES Working Group Food

The Milan Urban Food Policy Pact, signed in 2015 by 117 Mayors from across the world, promoted a regionalization process that led to the creation of a Working Group Food within the main European cities association, EUROCITIES. The Working Group gathers 51 cities, working on food policies related topics such as food governance, stakeholder engagement, waste and circular economy, urban-rural linkages, procurement etc.; by doing this the working group developed several advocacy activities at the European Commission, becoming a privileged interlocutor of DG DEVCO, DG SANTE, DG RTD and DG REGIO. The Working Group Food also aims to become a "creative hub" for sharing information, ideas, best practices and experimenting innovative solutions related to urban food.

http://www.eurocities.eu/eurocities/working_groups/Food&tpl=home



C40 Food System Network

The Food Systems Network supports city efforts to create and implement comprehensive solutions that reduce carbon emissions and increase resilience throughout the urban food system. Cities have strong authority over many aspects of urban food systems. The Network, in partnership with the EAT Initiative, will help participating cities achieve solutions to their most pressing challenges that result in carbon reductions, enhanced climate resilience and greater health equity and sustainability. The Food Systems Network works with cities to progress their priorities in the following areas: food procurement, food production, food distribution and food waste. On food waste in particular, the network is raising awareness of and addressing food loss and waste, including by facilitating recovery and redistribution for people in need (food banks) or animal feeding and implementing collection for composting.

www.c40.org/networks/food_systems



FoodWIN - Food Waste Award

FoodWIN is the European Food Waste Innovation Network supporting European cities to reduce food waste. They have built and supported a European network of food waste innovators that reduce food waste or use food losses. This unique expertise enables the network to offer holistic, comprehensive solutions to food waste in Europe. FoodWIN offers concrete tools to cities and elaborates inspiring solutions in line with local situations, with a view to co-creation and inclusiveness. Through a multi-stakeholders approach, they devise impactful solutions to move faster towards a Zero Food Waste Europe and they have been partnering with a wide range of actors in the food supply chain and governmental authorities at local, regional and European level. FoodWIN is recognized by the European Commission as an expert in the EU Platform on Food Losses and Food Waste. www.foodwin.org



Food Losses and Waste in European Cities

#EUFoodCities

#FoodWaste

#EUFoodWaste

Working Document

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#EUFoodCities

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