MILAN URBAN FOOD POLICY PACT

Barilla Center FOR FOOD & NUTRITION

FOOD & CITIES

THE ROLE OF CITIES FOR ACHIEVING THE SUSTAINABLE DEVELOPMENT GOALS

FOOD & CITIES
The Role of Cities for Achieving the Sustainable Development Goals

This publication was prepared by a joint team
of the Barilla Center for Food & Nutrition Foundation (BCFN) and the Milan Food Policy Office
under the framework of the Milan Urban Food Policy Pact MUFPP

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The Milan Food Policy and the Milan Urban Food Policy Pact is a joint initiative
of the City of Milan and Cariplo Foundation.

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November 2018

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Please cite this publication as:
BCFN, MUFPP (2018) "Food & Cities. The role of cities for achieving the Sustainable Development Goals" www.barillacfn.com.

ISBN 9788894399400

We wish to thank the following 71 co-authors who kindly participate in the definition of content of the pubblication:

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Acknowledgement

The contribution of the following experts and institutions is gratefully acknowledged:
BCFN Foundation Advisory Board, Food and Agriculture Organization of the United Nations (FAO)
BCFN Foundation: Valentina Gasbarri, Alessio Mennecozzi, Anna Ruggerini
Secretariat of the Milan Urban Food Policy Pact: Davide Di Martino and Panayota Nicolarea.

We wish to thank the following city officers and experts, who kindly agreed to participate in the survey programme for this report:
De Batselier Karine, Maruška Markov, Adelheid Sagmeister, Katrien Verbeke, Gabrielle Guimarães, Barbara Emanuel, Morel Gaétan, Marino Cavallo, Vicenç Planas, Gabriele Riccardi, Danielle Nierenberg, Nicolas Bricas, Million Belay, Francesca Villani, Molly Anderson, Afton Halloran, Holly Freishtat, Stefano Zamagni, Alison Blay Palmer, Barbara Buchner, Thomas Forster.

We would like to thank our major contributors:

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Dear reader,

the City of Milan is honored to co-create this joint publication Food & Cities together with the Foundation Barilla Center for Food and Nutrition.

The process that led to Expo 2015 "Feeding the Planet. Energy for life" promoted the interest of a wide range of Italian actors: institutions, universities, civil society and private sector towards the definition of significant food sustainability proposals. Milan encouraged a change and the Municipality took the lead, together with Cariplo Foundation, for strengthening the legacy at city level through a dedicated policy initiative. As a local authority we constantly work to make our city a better place to live and from 2015 we have been implementing this process to rethink our approach as policymaker for the sustainability of the food system. In this direction, the main achievements are: the co-creation of a comprehensive Urban Food Policy, the continuity of a strong political commitment, the establishment of a food governance and tangible implementate actions by the municipality, involving urban relevant actors.

At a global level Milan leads a process aimed at gathering the interest and efforts of other worldwide cities with similar goals and launched a Pact among mayors: the Milan Urban Food Policy Pact. A new global initiative of city diplomacy that contributes to the debate and achievement of results on urban food policies.

On this topics Milan became an international hub of knowledge. The involvement of more than 70 co-authors for this publication shows the wide array of organizations that have in Milan a point of reference in this field of policymaking.
The innovative contribution of this work is to deepen the link between urban food policies and SDGs targets, through the presentation of the effort of urban thematic networks, city good practices of each continent, tools for monitoring the results and policy recommendations.

This publication is the opportunity to share the vision and the added value that we see in this innovative field of action. I hope that you will be inspired reading all the contributions and join our works for a future proof sustainable food system.

Enjoy your reading,

Anna Scavuzzo
Milan Vicemayor
in charge of Food Policy

Dear reader,

When we think about food sustainability, our minds go first to the countryside. It is there, after all, that farmers grow almost all that we eat. But we're making a giant mistake.

For the first time in human history, more than half of the world's population live in urban areas. This number is expected to rise to 80 per cent by 2050. Massive urbanization means that the challenge to feed our growing global population, while keeping our earth safe and healthy, will be won as much in cities as the countryside. This report, a joint initiative by the Barilla Center for Food & Nutrition Foundation and the City of Milan, offers constructive strategies to win that war.

Until recently, cities paid little attention to their food supplies. When mayors spoke about the environment, most focused on cleaning up transport and power supplies. They overlooked the importance of a healthy and sustainable diet.

As this report demonstrates, many city leaders are waking up. In 2014, the city of Milan opened an international dialogue between 30 cities in order to define and share a common ground for urban food initiatives. The result of this dialogue was the Milan Urban Food Policy Pact (MUFPP), signed in October 2015 by around 140 cities. The Milan Pact recommends 37 actions to improve urban food policies. They range from requiring school canteens to serve healthy meals to encouraging markets for nearby farmers to sell their goods. All the initiatives strengthen rural-urban links and build ties between producers and consumers.

The shift toward urban living is changing our relationship with food. Most of us who live in cities no longer see how food is produced. We just consume it. Yet, achieving food sustainability in an era of rapid urbanization requires an understanding of how urban and food systems are intertwined.

This new report identifies ingredients that, when combined, can provide a recipe for making progress on fighting food insecurity, preventing health-related diseases, protecting natural resources and biodiversity, and preventing food loss and waste. It highlights the need to invest more in multi-stakeholder partnerships, public-private collaboration, infrastructure and services, and in empowering women and youth.

Much work lies ahead.
Let us hope that the transformational change need will start happening in all cities around the world.

I would like to thank the MUFPP, the network of cities worldwide and the various authors of this report for their crucial collaboration in developing it. All the stories, research, and insights will inspire our future actions by the examples, models and perseverance.

Guido Barilla
Chairman
Barilla Center for Food & Nutrition

The Milan Urban Food Policy Pact (MUFPP) was announced in February 2014 at the C40 Summit in Johannesburg, where the Mayor of Milan launched the proposal for a Pact to be signed at the forthcoming Expo 2015. Its activities started in September, when Milan and over 40 cities from every continent began to exchange views to define the contents of the Pact via video-conferences. In February 2015, the results were discussed during a meeting in London, where the possibility of including standards and indicators in the protocol was also debated.

The MUFPP development process enjoyed the guidance of an Advisory Group, formed by many leading, international organisations contributing to a more sustainable, equitable and healthier future for the planet. Moreover, to improve the coordination of the drafting of the Pact, the City of Milan put together a Technical Team: a panel of prominent international experts with a strong track record in dealing with food-related issues

The Milan Urban Food Policy Pact was signed on 15 October 2015 in Milan by over 100 cities and presented the following day to the UN Secretary General, Ban Ki-Moon, on the occasion of the World Food Day celebration. It represents one of the most important legacies of EXPO 2015.

After 2015, a wide range of cities started to work on the sustainability of their local food system and the number of signatory cities grew steadily from the 113 initial cities to the 179 of today.
One of the most important goals of the Milan Urban Food Policy Pact (MUFPP) is to stimulate the exchange of practices and learning between signatory cities. With the key contribution of Fondazione Cariplo, the MUFPP Secretariat launched the Milan Pact Awards to foster this collaboration.

The first Milan Pact Awards were presented in October 2016 at the Annual Gathering and Mayor's Summit, hosted in Rome by the Food and Agriculture Organization (FAO) during the World Food Day celebration. The Milan Pact Awards seek to be innovative in the ways they support cities' efforts to strengthen urban food systems and adapt as the needs of signatory cities change. The recognition and profile that comes with conferringawards for good practice has been shown to help catalyse this exchange between the more experienced cities and those that are just beginning to work in the area of the food system and the manner in which it relates to other priorities of city mayors.

The MUFPP works in synergy with several international areas of debate, such as the New Urban Agenda, the Paris Declaration on Climate Change and the World Urban Forum, with existing urban networks, e.g. C40, Eurocities, WHO-Healthy Cities, and with UN bodies, such as FAO, UN-Habitat and UNSDSN-Youth, to connect with the global agenda for sustainable development.

The **BCFN Foundation promotes open national and international dialogue between Science, Politics, Business and Society**. It follows a multidisciplinary approach to address today's major food-related issues from an environmental, economic and social perspective, to secure the wellbeing and health of both people and the planet. Over the years, three global food paradoxes have served as a backdrop to BCFN's research activities and advocacy:

- **Nutritional challenges:** For every person suffering from undernutrition there are two, who are overweight or obese. Evidence continues to highlight a rise in world hunger, whereas the increasing prevalence of non-communicable diseases puts a strain on healthcare systems to the point at which they become economically unsustainable.
- **Food loss and waste:** 821 million people suffer from hunger, but a third of food is lost or wasted. Food waste corresponds to four times the amount required to feed the people suffering from undernutrition worldwide.
- **Sustainable agriculture:** Climate change impacts on agricultural systems are becoming more visible, yet harder to estimate. Although agriculture has the potential to capture carbon emissions and help mitigate the impact of climate change, the ecological footprint of agriculture is growing.

In 2014, the BCFN Foundation developed the **Milan Protocol** to give a powerful, unified voice to the common aspirations of people throughout the world to preserve the Planet. As a legacy of the World EXPO 2015, it aimed to raise awareness among institutions and the wider public of the need to tackle the world's food paradoxes in a coordinated, multidisciplinary manner. The Milan Protocol inspired the **Milan Charter**, a global agreement to guarantee healthy, safe, and sufficient food for all, which the Italian government presented to the Secretary General of the United Nations, Ban Ki-moon, during Expo2015.

With its action-oriented approach, the BCFN seeks to act as a catalyst to develop frontier ideas, promote solutions and identify new, innovative ways to generate a positive impact, with the achievement of the SDGs as its target. Through our scientific research programmes, such as the Food Sustainability Index comprising a City Monitor; Food and Migration, our public initiatives, such as our flagship event, the International Forum on Food and Nutrition and programmes like the Food Sustainability Media Award, BCFN YES!, we connect different stakeholders in the food and sustainability sector and foster a global dialogue to achieve a sustainable food future for People and the Planet, all within the framework of the Sustainable Development Goals (SDGs) and the Paris Climate Agreement. The BCFN educational programmes aim to raise awareness among the younger generations of the importance of food, nutrition and sustainability. The Massive Online Open Course (MOOC) on Mediterranean agri-food systems, developed in collaboration with the Sustainable Development Solutions Network (SDSN) Mediterranean, with SDG Academy and the University of Siena, provides a comprehensive tool to increase the knowledge of the global citizens of tomorrow.

The challenges our global food system is facing today are unprecedented. Never before has there been such a need for a transformative approach, which can make food the focus of our way of thinking within the framework of the 2030 Agenda and the Paris Climate Agreement.

In 2014, the Municipality of Milan and Fondazione Cariplo began to develop the **Milan Food Policy**, an innovative, urban policy, aimed at increasing the sustainability of the Milan food system.

Nowadays, the Food Policy is managed by an integrated governance framework that consists of: the political commitment of the **Deputy Mayor of Milan**, a steering committee for strategic communications between the **City of Milan** and **Cariplo Foundation**, interdepartmental meetings and a technical Food Policy Office, responsible for its implementation. This integrated, shared responsibility facilitates the achievement of the goals to implement the Food Policy in different sectors.

Thanks to its Food Policy, the City of Milan is becoming a knowledge repository on the city-food nexus. There are several reasons behind this. Locally, it participates in the development of the city-food nexus by implementing its food system priorities and guidelines, approved in 2015 by the City Council. In **Europe**, Milan is active and takes the lead in a knowledge-sharing initiative, working not only with the Eurocities Urban Food Policy Working Group, but also with the European Commission at some of the spaces it provides for debate as part of the initiative Food 2030 (DG RTD) and the EU Platform of Food Losses and Waste (DG SANTE). On a **global level**, Milan is also learning from the experiences shared through the Milan Pact Awards.

Comune di Milano

Fondazione CARIPLO

www.comune.milano.it/foodpolicy

MUFPP

37
recommended actions

6
categories

44
indicators

SDGs

17
goals

147
targets

6 URBAN NETWORKS

- 100 Resilient Cities
- C40
- Eurocities
- Ellen MacArthur Foundation
- Let's Food Cities
- RUAF

EUROPE

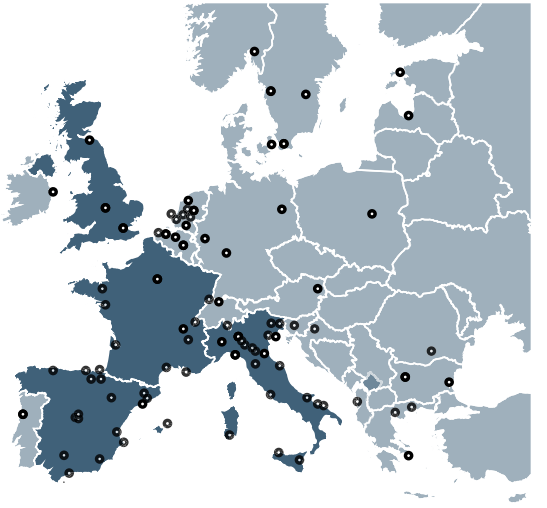
AGRICULTURE
New CAP

FOOD WASTE
EU Platform FLW

FOOD SYSTEM
Food2030

NATIONAL NETWORKS

- France
- Italy
- Spain
- United Kingdom



51 Eurocities
Working Group Food

MUFPP CITIES

179
MUFPP cities

7
case studies

ABOUT FOOD & CITIES

Today, over 50% of the world's population lives in cities and by 2050, urban centres will increase by 80%. It is widely believed that current food systems cannot sustainably meet the growing food demands of cities. We need transformative change to nourish people sustainably, while simultaneously preserving and restoring our ecosystems. Urban residents consume the largest share of food and experience constantly growing requirements for environmentally intensive diets, all of which leads to increased competition for land and water resources. City dwellers face not only urbanisation, but also a nutritional transition, where increased income shifts diets towards more animal-source foods and processed foods, rich in salt, sugar and fats.

Agriculture is already in the spotlight as a major contributor to GHG (greenhouse gas) emissions, water scarcity and land degradation. In fact, the amount of greenhouse gas emissions linked directly to food production ranges between 18% and 51% [2,3], thus giving this sector the most significant impact. Food production also affects global water use and accounts for a global average[4] of some 92% of our daily individual water footprint. Land is severely impacted by food production, with the pollution of arable areas with fertilisers and antibiotics or with an excessive discharge of animal waste having the most direct effect. Currently, up to 80% of the available cropland worldwide is used for animal farming, either to grow animal feed ingredients or as pasture.

Another crucial issue is adequate nutrition. While cities have more food, jobs and social services, these benefits are unevenly distributed. Excessive energy consumption, coupled with limited physical activity, leads to rising problems of obesity and chronic, diet-related diseases in most cities. These problems are increasingly found among the poorer sectors of society, where it is not uncommon to find overweight and obese adults living with underweight children, amid widespread micronutrient deficiencies.
In September 2015, 193 world leaders adopted the 2030 Agenda for Sustainable Development. This describes 17 Sustainable Development Goals (SDGs) with 169 corresponding targets to achieve by 2030, in order to end poverty, protect the planet and establish prosperity and peace. For the first time, the global community agreed to work together on the same agenda to tackle common challenges and build a sustainable future for all. Healthy, sustainable food systems are crucial if we are to achieve all the SDGs. Cities are vital in transforming food systems if we are to achieve the SDGs by the year 2030. The challenges and opportunities in urban and peri-urban systems endorse the transformative approaches put forward by numerous players.

In 2015, a number of pioneer cities took part in drafting the Milan Urban Food Policy Pact, which recommended 37 actions to identify food policies for the city.

In the same context, this publication aims to investigate the role of cities in achieving the SDGs and to suggest healthier, more sustainable food systems, which will benefit both people and the planet. This joint initiative by the Barilla Center for Food & Nutrition Foundation and the City of Milan will use the Food Policy Office and the Milan Urban Food Policy Pact (MUFPP) and the experience of both institutions as leverage for healthy, sustainable food systems.

NOTES

[2] Steinfeld, H., Gerber, P., Wassenaar, T., Castel, V., Rosales, M., de Haan, C. (2006). Livestock's long shadow. FAO, Rome 2006.

[3] Goodland, R. and Anhang, J. (2009). Livestock and Climate Change: What If the Key Actors in Climate Change Are Cows, Pigs, and Chicken? World Watch.

[4] Hoekstra, A.Y. and Mekonnen M.M. (2012). The water footprint of humanity. 109(9). 3232-3237

Objective and Structure of the Publication

In a world of environmentally intensive food production and forecasts of high levels of urbanisation, urban food systems are key to achieving the SDGs for a sustainable future for all.
Food is a major asset in **Italy** and the joint effort of BCFN and MUFPP aims at providing all stakeholders working in the food system with a new, innovative, inspiring analysis of cities through a sustainability perspective.

The structure of the publication is as follows. The first chapter explores the **context within which cities have focused their interest** in working on food policy issues, based on social, cultural, academic, institutional and philanthropic dynamism.

The second part of the publication pinpoints the specific link between urban food sustainability and the **impact on the implementation** of the **SDGs** from the perspective of the cities. Several international authors used a set of **44 indicators** developed by FAO and MUFPP for the SDGs and their targets to record their efforts to **monitor the progress** of the cities.

The third chapter seeks to show how the **Cities Network actively supports local authorities** by taking significant action. The fourth section focuses on **the European approach** to the city-food nexus, and introduces the actions promoted by the EU Commission, such as the **New Common Agricultural Policy** (DG AGRI), the policy framework **FOOD2030** (DG RTD) and the **Circular Economy Packages against food waste** (DG SANTE). The initiatives of the Commission are in line with the actions of those **European cities**, which are leading the transition toward a more sustainable urban food system. **Seven in-depth case studies** explore and analyse urban initiatives managed directly by city municipal food policy actions in **Seoul**, **Milan** and **New York**, by research in Ouagadougou and **Sydney**, by social activities in **Rio de Janeiro** and by developments in the private sector in **Tel Aviv**. Municipal employees, researchers and experts have examined the progress of these seven cities in their different geographical contexts.

This volume is the **joint effort of over 71 co-authors**, including scholars, food policy officers, representatives of international organisations and civil society organisations. These players contribute to the development of urban food systems in different parts of the world by implementing actions and facilitating the dialogue and transfer of knowledge between cities. All these efforts are pivotal in **promoting the transformation of urban food systems and in making Cities "hubs" of sustainable development**. By taking a holistic and inclusive approach, this publication aims to spread solutions and spur interest and commitment to action in other cities too. In order to provide information on how to achieve **the 2030 Agenda, each contribution** from city networks and European policies **highlights the link to the specific SDG** and to the cities' actions and recommendations.

The publication outlines a **set of recommendations for policy makers, international organisations**, business and civil society organisations, developed to identify key performance indicators to scale up and replicate the initiatives and to encourage dialogue among different stakeholders. The BCFN and MUFPP wish to thank all those experts who kindly agreed to participate in a survey for this report.

SDGs and MUFPP frameworks to read the publication

The 17 SDGs and the 6 categories of the MUFPP are used as framework of analysis throughout the publication. In the different sections these icons will help the reader to understand the links among the described actions and these targets.

MILAN URBAN FOOD POLICY PACT

The MUFPP framework is organized in 6 categories (Governance, Sustainable Diets and Nutrition, Social and Economic Equity, Food Porduction, Food Supply and Distribution, Food Waste) that recommend 37 actions, here below connected with SDGs targets.

1. Governance
6 recommended actions
SDG targers: 16.6 - 17.14

2. Sustainable Diets and Nutrition
7 recommended actions
SDG targers: 2.1 - 2.2 - 3.4 - 6.1

3. Social and Economic Equity
6 recommended actions
SDG targers: 8.3 - 8.2

4. Food Production
7 recommended actions
SDG targers: 2.3 - 8.4 - 12.2

5. Food Supply and Distribution
7 recommended actions
SDG targers: 9.1 - 12-6 - 12.7

6. Food Waste
4 recommended actions
SDG targers: 12.3 - 17.7

URBAN STAKEHOLDERS AND FIELD OF ACTION

CIVIL SOCIETY

Food and Cities: an Area of Growing Interest

PUBLIC AUTHORITIES

Local Institutions and Urban Food Policies.
The Experience of Milan and EXPO 2015

RESEARCH BODIES

How Universities and Research Institutions
Can Support Design Thinking in Food Policy Definition

CITIES COALITIONS

The Milan Urban Food Policy Pact

PHILANTROPIC ORGANIZATIONS

How Grantmakers Can Support the Efforts of Cities
in the Definition of Urban Food Policies

COORDINATED CITIES EFFORTS

Transforming Food Systems for Defining Local Urban Policies

UN BODIES AND AGRICULTURE

FAO - Getting Cities on the Food and Agriculture Agenda

UN BODIES AND HEALTH

The United Nations Decade of Action on Nutrition:
the Potential to Support Urban Food Environments

HEALTHY DIETS

Food & Cities. The need for sustainable diets Definition

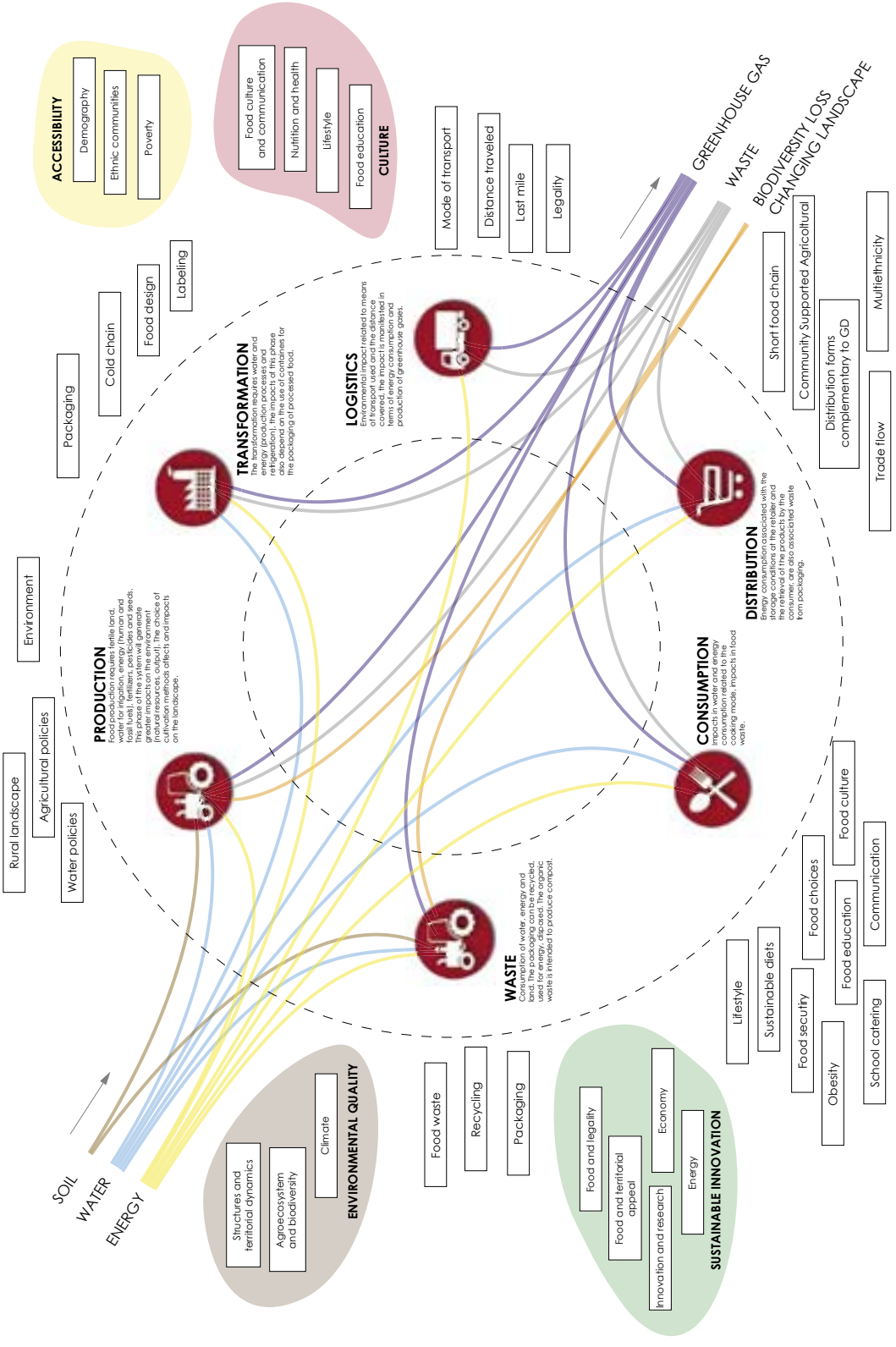
NUTRITION

Cities, Nutrition and SDGs

UN BODIES AND URBANIZATION

UN Habitat. Strengthening Urban-Rural Linkages
for Improved Food Nutrition and Security

URBAN FOOD SYSTEM



1. INTRODUCTION AND CONTEXT

This section focuses on the different approaches to urban food policies developed by a wide range of stakeholders

1.1 Food and Cities: an Area of Growing Interest

Andrea Calori, EStà Research Center

The English expression food policy has similar terms in other languages, even though institutional cultures vary greatly around the world and there are as yet no uniform classifications. But, in general, we can say that they refer primarily to the capacity to connect stakeholders and food related issues, in order to define spheres of action, objectives, and the procedures necessary to design, implement, and measure actions that have a general and public effect. Institutional efforts to address food systems at the urban level developed slowly during the '80s and '90s. In North America, food systems began to be considered not only as the sum of sectoral policies (e.g. production, agro-industry, commerce, etc.) but also as a way to address in a more integrated way some of the negative effects of many Western lifestyle and eating habits like obesity and non-communicable diseases, as well as to tackle urban poverty. This concern led to a more complex vision regarding the need to manage through a combined approach certain inefficiencies in the organization of food chains (transportation, regulation, changes in the commercial marketplace, etc.), which have a tangible impact on cities' material and immaterial characteristics, including lack of availability of healthy food, urban lifestyles, "food deserts", etc.

A debate also gradually emerged in Europe, initially as an evolution of civic experiences (collective management of spaces, solidarity economies, cooperatives, etc.) or campaigns led by civil society actors, mainly about food sustainability and the relationship between producers and consumers. At the time, in Africa, Asia and Latin America, the connections between food and the city focused primarily on food security, urban poverty and local economic development. Some of these experiences also resulted in the creation of groups of cities set on improving their effectiveness at local level and their ability to work and participate in decision-making at a higher level, and led to the launch in 2009 of FAO's Food and the Cities Initiative, an online platform that facilitates interconnections across a wide network of experts and encourages the growth of a common urban food culture.

In recent years, urban food issues and policies have become intertwined, partly as a result of different institutional cultures and various institutional agendas at local national and international levels. Among these institutional processes, urban food policies have been progressively linked to the debates on the right to food and the right to the city, and to stronger approaches to sustainability such as urban agroecology, the water-food-energy nexus and the emerging paradigms of bioeconomy and circular economy.

1.2 Local Institutions and Urban Food Policies. The Experience of Milan and EXPO 2015 actors and international institutions

Filippo Gavazzeni, Milan ViceMayor's Staff, Food Policy Liaison Officer

Cities nowadays are becoming living laboratories for thinkers and facilitators of innovative policies. Local authorities, acting as urban leaders, are catalysing change by supporting a transformation towards inclusive future-proof food systems, engaging a wide diversity of actors for the co-creation of breakthrough food policy solutions. Food has always occupied a central role in our societies and lives, but approaching it from a policy perspective is a relatively new way to look at the issue.

Cities active in urban food policies have become facilitators of the discussion to co-design processes, mutual learning and exchanges of good practices amongst the wide range of urban stakeholders engaged in the urban food system.

The cities-food nexus started emerging in the early 2000s and was led by pioneer cities like Toronto, New York, Vancouver, London and Bristol. Alongside the most innovative actions, a group of creative research centres and civil society movements created a vibrant environment that prompted cities to make a strong commitment to the cities-food nexus. The first scaling-up phase was enabled by the FAO, which facilitated an initial networking action amongst cities by establishing the "Food in the Cities" initiative. On this basis, the City of Milan started its action during Expo 2015 and directly involved other local authorities in this effort, in the belief that engaging cities in the definition of food policies could lead to a rapid scale-up of the process.

Since 2014, Milan has been at the centre of a comprehensive initiative that can be informally called "Food Diplomacy" and has capitalized on both the experience of the bidding to hold the 2015 Universal Exposition (2006-08) and the work related to the contents of Expo 2015 itself (2008-15). The initiative revolves around four main pillars: urban networking, involvement of international bodies, seeding food topics in the existing international discussion, and project design.

For Milan, the urban networking started in 2015 with the definition process and launch of the Milan Urban Food Policy Pact (MUFPP), as well as through the establishment in 2016 of the EUROCITIES Working Group Food project, the main European mayor's associations, and the facilitation of the launch of the C40 Food System Network. From the early stages of the MUFPP definition, a series of strategic relations were established with international bodies such as FAO and WHO. The forums of discussion where the seeds of urban food policy have been sown include the UN Habitat III in Quito 2016, the Global Nutrition Summit hosted in Milan 2017 and the 9th World Urban Forum 2018 in Kuala Lumpur.

Moreover, the City of Milan is a partner in the most innovative European food projects, including TRiFOCAL with WRAP, FIT4FOOD2030 with Amsterdam University, the Food in Cities tender for DG RTD, membership in the EU Platform for Food Losses and Waste of DG SANTE, and the research project 'Towards a Common Food Policy' on the future of the CAP with IPES-Food.

What is being described as "Food Diplomacy" is therefore emerging as a holistic strategy able to increase interest in a more sustainable food system among local authorities and to establish shared spaces of cooperation with different stakeholders committed to this joint effort. In this context, new food policies are emerging worldwide at the urban scale and there are innovative, voluntary actions, 'flexible tools' capable of providing a place for cooperation, consultation, and regional networking among the public and private sectors, together with civil society.

For cities, urban food policies represent a new and promising opportunity to lead our communities towards a more sustainable, inclusive and welcoming urban environment.

1.3 How Universities and Research Institutions Can Support Design Thinking in Food Policy Definition

Roberta Sonnino, Cardiff University

Global initiatives such as the 2015-2030 UN Sustainable Development Goals provide clear targets for creating food systems in which natural resources such as water, soil, land and sea are used sustainably within planetary boundaries. Taken together, these targets are raising the need for a new policy agenda that links food and nutrition security with environmental integrity and socio-economic welfare.

Innovative research has a key role to play in shaping this agenda. By adopting a food systems approach that looks at multiple sectors, actors and scales, researchers enhance understanding of the interconnected drivers of food (in)security, identify strategic points where intervention can be the most effective, and provide robust evidence to support policy-makers who aim to move beyond silo-based thinking to adopt coherent, long-term policy strategies.

It is crucial to understand that this is not a type of research that can achieve positive and concrete change through a traditional "linear" process. In order to engender systemic changes in our food system and make it sustainable, resilient, inclusive, responsible, diverse and competitive, dialogues between multiple actors (public, private, and civil society) need to be embedded at each stage of the research. There is a need, in other words, for participatory forms of innovation that link citizens with different scientific/academic/policy actors to develop practical knowledge-sharing exercises that can lead to workable solutions. In short, we need a multi-stakeholder and multi-disciplinary approach to research that emphasizes co-design and co-delivery of innovation breakthroughs. This will require strengthening the capacities of multiple actors and building communities of practice that link (and build trust between) civil society, scientists, and policy-makers. While this will no doubt be challenging, it is vital for developing a transformative project that empowers communities on the ground by enabling them to (re)shape multiple dimensions of food systems and, therefore, address the power imbalances in the food system.

Cities are excellent platforms for beginning to develop this research and policy agenda. As places in which "poverty, food insecurity, diet-related health inequalities and retail food restructuring are perhaps most visible[5] , urban areas are emerging as strategic transition nodes to address the complex socio-ecological issues that have disrupted the internal metabolism of the food system. Researchers and policymakers alike are indeed beginning to focus on cities not just as the spatial dynamic through which the interdependent pressures that shape food insecurity converge,[6] but also as places where new food "politics of the possible" are being created[7] and new urban-rural development trajectories can be set in motion.[8]

An emerging but still fragmented literature is extolling the potential of innovative and more place-based urban food policy approaches that are attempting to counteract the regressive impacts of neoliberalism and support collective action and knowledge-exchange. Through a range of practices that promote joined-up and integrated food policies[9], enhance civil society participation in the governance of food,[10] and incentivize trans-local collaborations such as the MUFPP[11], cities are re-casting themselves as food system innovators. It is therefore the right time for researchers and city governments to work together to create inclusive spaces and multi-stakeholder platforms where innovations can be incubated, nurtured and exchanged. It will be equally important for researchers to share their critical perspective, which is key to developing and strengthening knowledge of the complexity of the food security and sustainability challenge. Without such knowledge, it will not be possible to identify barriers to policy implementation or to understand what socio-ecological and political reconfigurations are necessary, across different scales, to engender a much needed transformation of our food system.

NOTES

[5] Bedore, M. (2010). Just urban food systems: A new direction for food access and urban social justice. Geography Compass, 4(9), 1418–1432.

[6] Morgan, K., & Sonnino, R. (2010). The urban foodscape: World cities and the new food equation. Cambridge Journal of Regions, Economy and Society, 3, 209–224.

[7] Blay-Palmer, A., Sonnino, R., & 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.

[8] Sonnino, R., Marsden, T., & 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.

[9] Mansfield, B., & Mendes, W. (2013). Municipal food strategies and integrated approaches to urban agriculture: Exploring three cases from the global north. International Planning Studies, 37–60.

[10] Morgan, K. J. (2015). Nourishing the city: The rise of the urban question in the global north. Urban Studies, 52(8), 1379–1394.

[11] Sonnino, R., Marsden, T., & 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.

1.4 The Milan Urban Food Policy Pact

Yota Nicolarea, MUFPP Secretariat
Elisa Porreca, Milan Food Policy Office

The Milan Urban Food Policy Pact (MUFPP) is an agreement among mayors on urban food policies. Through the Pact, mayors from all over the world commit voluntarily to work jointly so that their citizens can benefit from local food systems that are more sustainable, fair, climate-friendly, safe, diverse, resilient, inclusive, and able to provide healthy and affordable food to all people, in a human rights-based framework.

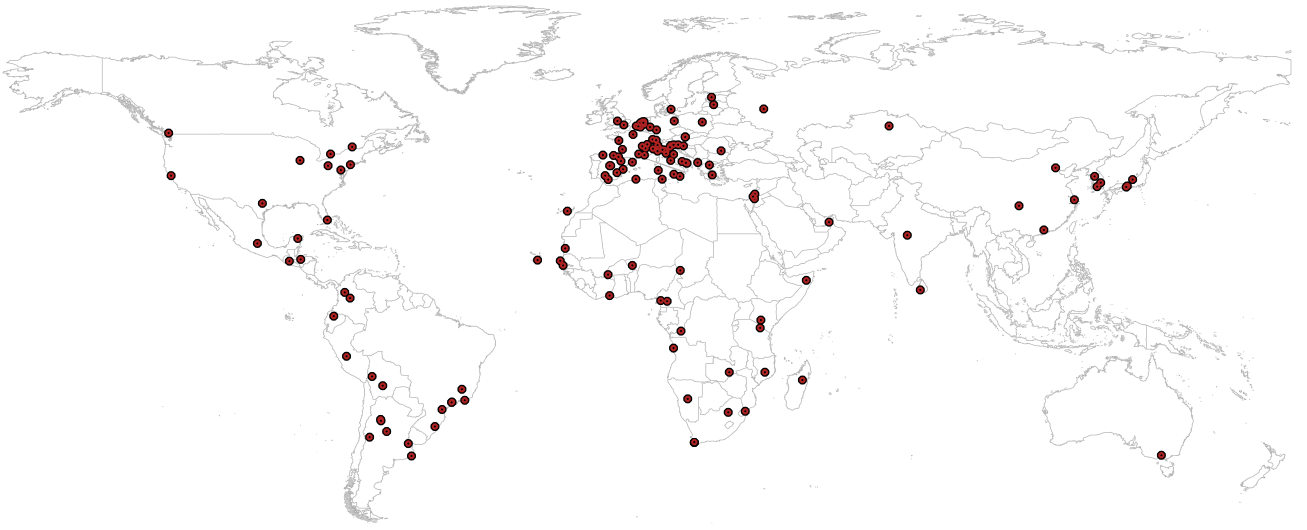
The structure of the MUFPP consists of a preamble that illustrates the role of cities in fostering sustainable urban food systems and a Framework of Action listing a set of 37 voluntary actions set within 6 categories: Governance, Sustainable diets and nutrition, Social and economic equity, Food production, Food supply and distribution, and Food waste.

The Milan Pact is unique in terms of its topic, its scale, and its scope, as it is the only joint declaration of cities on urban food policies existing at the global level, and since its signing it has reached a considerable number of member cities that is constantly increasing.

The governance of the Milan Pact is ensured by its Steering Committee, composed of 13 cities from different continents (from Sao Paulo to Athens, from Nairobi to Toronto), and the Milan Pact Secretariat, established within the Mayor's Office of Milan, guaranteeing coordination of all activities related to the Pact as well as maintaining relations with cities and networks and liaising with international organizations and other institutions. The signatory cities meet at the Milan Pact Annual Gathering and Mayors' Summit, an event held every year in a different Milan Pact city. Previous editions of the MUFPP gathering include the signatory ceremony and launch of the Pact in 2015 in Milan, in 2016 in Rome at FAO Headquarters, in 2017 in Valencia, and in 2018 in Tel Aviv-Yafo. The Annual Gathering provides an opportunity for cities and other actors involved in urban food to meet, exchange knowledge and practices, participate in technical workshops, and share insights. It is also the occasion for presenting the Milan Pact Awards, an event that gathered and shared 157 urban food practices stemming from signatory cities over 3 years (2016-2018).

The MUFPP and FAO jointly developed the MUFPP Monitoring Framework (fully described in Chapter 2) to assess the progress made by cities in achieving more sustainable food systems. As of now, 13 pilot cities have helped to identify a final set of 44 indicators. Each indicator is related to specific targets of the SDGs and will link the urban level to the global accountability of sustainable development goals. During the Tel Aviv Annual Gathering (September 2018), discussions were held on the next steps for the MUFPP. It was agreed that the Annual Gather-

ing will continue to take place on a yearly basis on a more technical level, where Working Groups, composed of and led by Milan Pact cities, will be established to work on specific themes covering the interests and needs of cities, i.e. food waste, innovation, nutrition, etc. The aim is to remodel the Gathering, conceiving it not only as a "showcase" for the cities but also as a space for concrete action thought and prepared over time. The MUFPP is rapidly spreading around the world and advancing several regionalization processes. Cities have shown great interest in working within their regional contexts, and various meetings have taken place in the last three years: in Europe, with the EUROCITIES Food in Cities working group, created in 2016 and meeting twice a year; in Africa, the Dakar Forum 2016, the Durban Forum 2018 and the Brazzaville Forum 2018 were held among French-speaking MUFPP cities; in the United States, within the U.S. Conference of Mayors at the 86th USCM Winter Meeting in Washington DC; in 2019 Rio de Janeiro will host the first Latin American MUFPP Regional Forum. The added value of regional activities is the stimulus to developing a shared strategy to tackle common challenges, bonding cities together, strengthening the implementation of the MUFPP Framework for Action, and continuing to work towards innovative solutions for sustainable urban food systems.



1.5 How Grantmakers Can Support the Efforts of Cities in the Definition of Urban Food Policies

Valentina Amorese, Carlo Mango, Fondazione Cariplo

Though generalizations are always difficult to make, when reflecting on the ways that grantmaking organizations like Fondazione Cariplo can support the efforts of sustainable food systems towards the definition of urban food policies, we can envision three main levels of action: local, European and global. By the end of this chapter it should become clear that these levels are deeply interrelated, and that their main strengths emerge from the way they intersect with one another.

Fondazione Cariplo has approached the issue of developing an urban food policy directly from the inside, collaborating with the local municipality in the development, definition, and implementation of the urban food policy since 2014. As a grantmaking organization linked to the banking sector, Fondazione Cariplo aims to help social and civil organizations improve their services to the community. Our efforts have always focused on supporting the municipality in developing a food policy in line with current discussions on these issues while at the same time also taking into account citizens' needs and interests. Our support to the development of the urban food policy has coincided, in terms of timeframes and issues, with our participation in the European flagship project on Responsible Research and Innovation (RRI TOOLS, a project to foster Responsible Research and Innovation for society, with society). By participating in this project, we learnt that being responsible means driving research and innovation towards sustainable, ethically acceptable, and socially desirable outcomes, so that our future is shared by all the individuals and institutions affected by and involved in the research process. We translated this into practice by supporting the local municipality in developing a framework of action that is inclusive and open in all stages of the process (from agenda setting to design, implementation, and evaluation). This is illustrated by the process involved in the drafting of the Milan Food Policy. The process began with a background analysis of the academic and local discussions being held on this issue, which led us to identify ten priorities. These priorities were discussed in a participatory setting with citizen representatives who were invited to exchange views on the subject in an open consultation with researchers and local authorities. The results of these open consultations were discussed and further developed by the local authority, which eventually finalized the text of the local food policy. This was clearly not the easiest or quickest way to draft a food policy; its strength, however, is that it engaged all the stakeholders from the outset, considering their different views and visions. It also gave legitimacy to the policy, which was seamlessly incorporated in the everyday practices of all the actors involved. In parallel, we acted at the international level by supporting the Milan Food Pact Award which, together with the

Milan Food Policy Pact, aims to enhance and facilitate the development of urban food policies worldwide and also support the natural tendency of cities to share best practices. Clearly, we can play a critical role within the global framework alongside the local municipality by virtue of the complexity of its experience at the local level. In this sense, as a team we are becoming a globally influential actor, with the capacity to inspire, support and encourage municipalities all over the world to develop their own food policies in a way that reflects local specificities as well as global trends.

Overall, we could say that foundations hold a special position by linking the private sector with the public sector and civil society. In addition, foundations are nimble organizations that continually shift from the local to the global level, allowing fertile hybridizations and helping to close spatial and conceptual gaps.

1.6 Transforming Food Systems for Defining Local Urban Policies

Thomas Forster, Practice2Policy LLC
Andrea Calori, Alessia Marazzi, EStà Research Center

The 2030 Agenda for Sustainable Development (SDGs) and the New Urban Agenda (NUA) together provide a general normative framework for governments at all levels to link sustainable development and sustainable urbanization. The SDGs linking sustainable development to cities include food, nutrition and agriculture. The New Urban Agenda provides more guidance to national and local governments on what is meant when SDG 2 (End Hunger, achieve food security and improved nutrition, and promote sustainable agriculture) intersects with SDG 11 (Make cities and human settlements inclusive, safe, resilient and sustainable).

The "food-city nexus", or the intersection of food practice and policy with the priorities for cities, began long before the conclusion of SDG and NUA final negotiations by national governments. Local and subnational governments of different scales in different regions of the world had begun to adopt comprehensive food strategies and policies years earlier. However, the first global protocol and framework for cities elevating food policy in ways that are linked to the SDGs and the future NUA came in the form of the Milan Urban Food Policy Pact (MUFPP or Milan Pact for short) launched at Expo Milan on World Food Day, October 16.

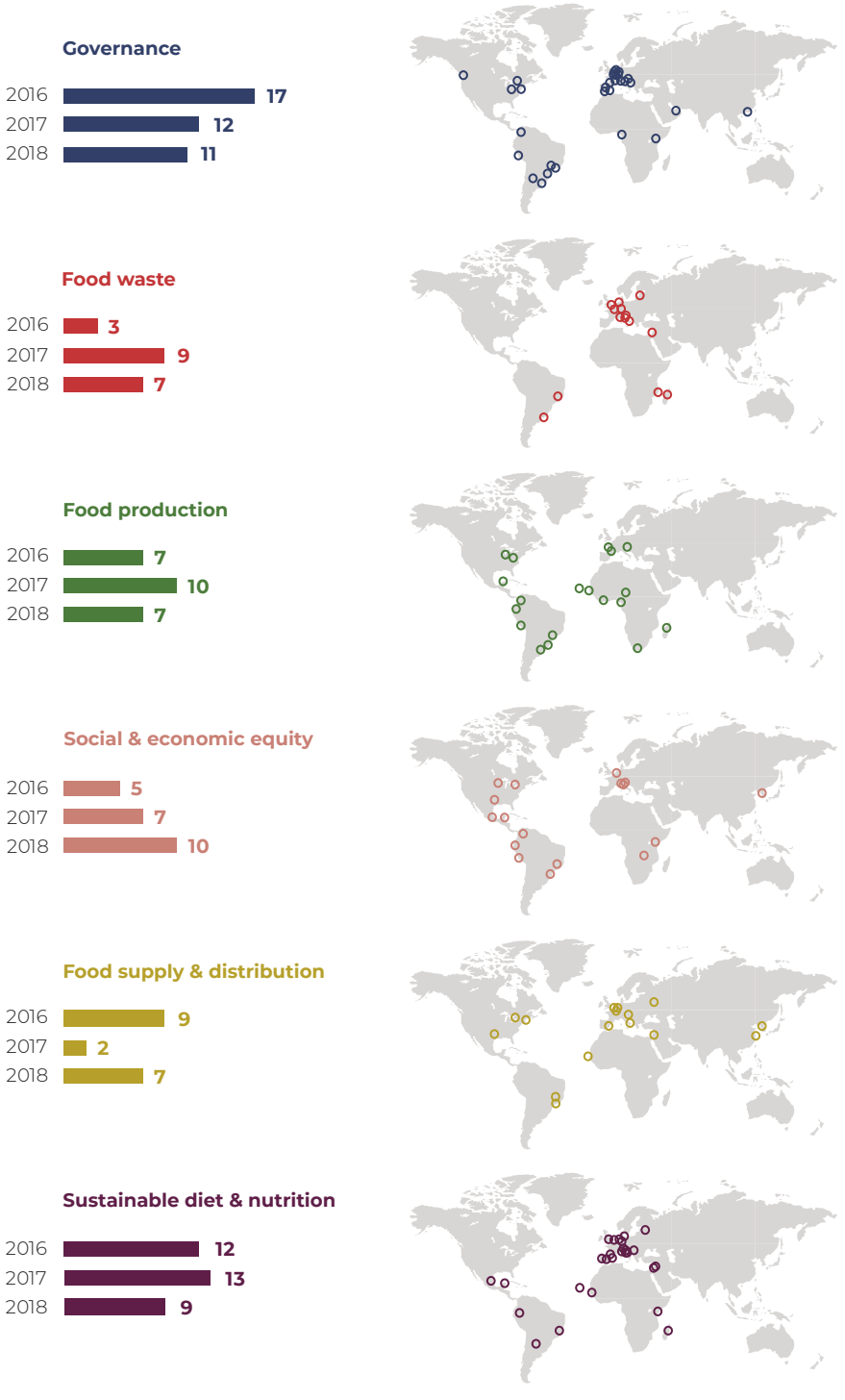
The cities that participated in drafting the Milan Pact began from a set of fundamental agreements, whether a city was rich or poor, small or large:

- Access to appropriate food and nutrition is fundamental for healthy urban areas;
- From production to consumption, food affects everyone;
- Hunger is increasingly urban;
- Food insecurity and malnutrition in urban settings are linked to poverty and the proportionately high cost of healthy food;
- Food systems must be an essential element of urban and territorial planning and design;
- Food is an engine of the urban economy;
- Urban food systems are especially vulnerable to crises; and
- Integrated territorial planning and development has the potential to strengthen urban-rural linkages.

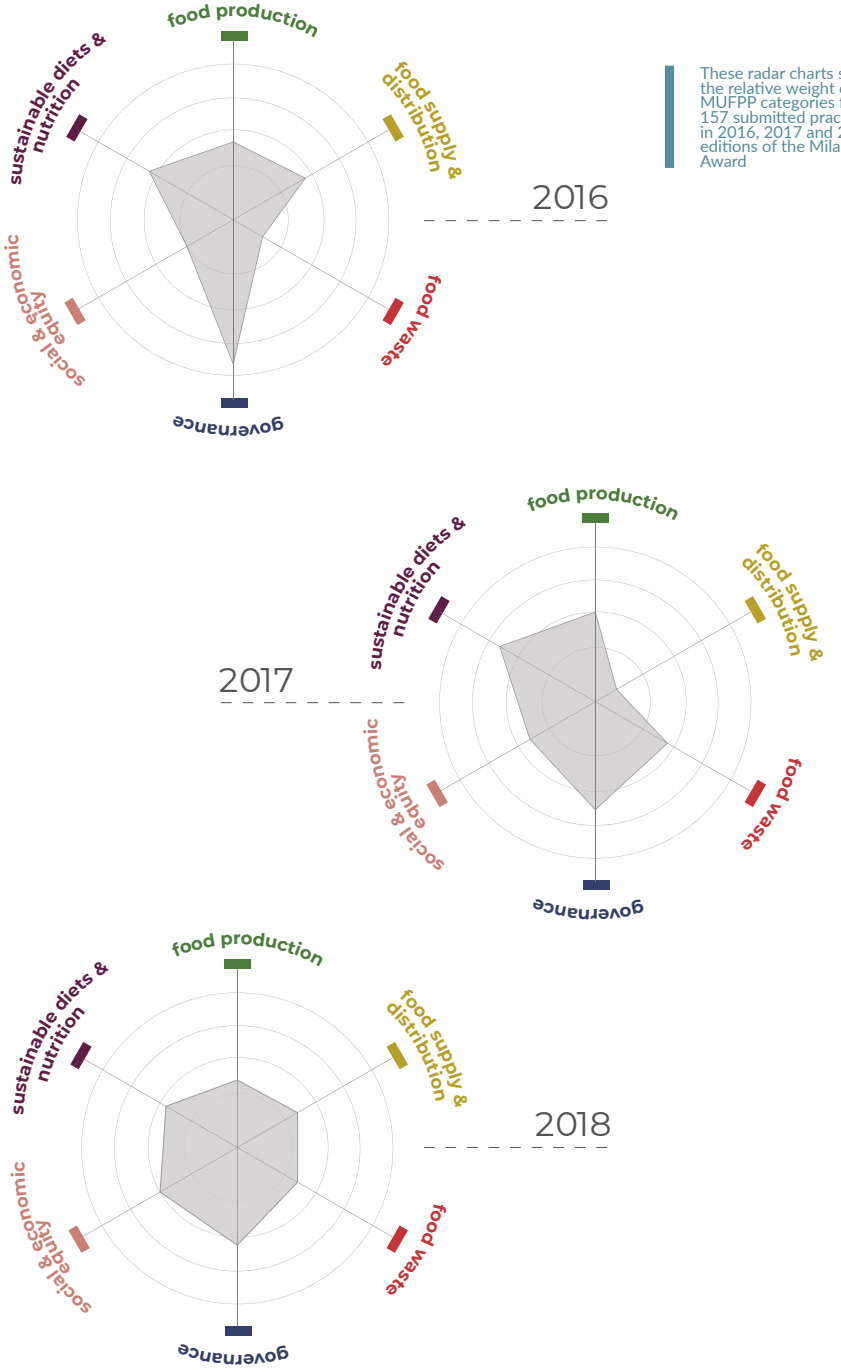
Most actors, from the international to the national and local levels, from governments to the private sector and civil society, agree that the current food system is unsustainable, broken, and incapable of both feeding a growing planet and protecting the natural resources of soil, water and biodiversity. The debate at all levels, from smallholder farmers to the World Bank, centres on how the transformation agenda is to be understood -- and how we get there.

There is little debate that a food system approach is essential to the transformation agenda, and this too is agreed upon by most actors from the UN

157 city submissions for the Milan Pact Award: year trends and geographical distribution by MUFPP categories



"FAO - ESTA (2018) "The Role Of Cities In The Transformation Of Food Systems: Sharing Lessons From Milan Pact Cities")



These radar charts show the relative weight of each MUFPP categories for the 157 submitted practices in 2016, 2017 and 2018 editions of the Milan Pact Award

food-related agencies to social movements. Where the divisions occur is in answering the question of how fundamental the changes in our food system need to be and who the key decision-makers will be at different levels, from the urban to the territorial, national and international levels of food governance. Actors at different levels have not agreed on what the future of food systems will be and what specific mechanisms are needed.

There is not (yet) a multi-level commitment to focus on the impact of agriculture on climate change (now estimated to be about 30% of anthropogenic emissions), or to

know whether powerful actors in food systems will drive changes in agricultural practices that reduce dependence on fossil fuels as well as reducing hunger and malnutrition. Up to now, the rise of hunger and malnutrition and the crisis of human mobility and migration towards cities have overtaken concern about the food systems' impacts on and impacts from climate change.

Nonetheless, there is some indication that the commitment of municipal and territorial governments, linked to broad movements of civil society and the private sector, supported by research and academic organizations, may be a progressive force for fundamental change that effectively decouples fossil fuels from food systems – city region by city region. One source of this assertion comes from the practices and policies of cities themselves. Experiences are accumulating but evidence is still building.

In 2018 an initial analysis sponsored by the UN Food and Agriculture Organization (FAO) drew upon 50 selected practices from the first two years (2016 and 2017) of submissions from cities to the Milan Pact Awards.

In September, two-page briefs for each of the 50 selected cities, designed and produced by the Milan-based research centre, Economia e Sostenibilita (EStà), were posted on FAO's Urban Food Actions Platform and on the MUFPP website. An analysis of the major trends seen in these practices and in other submissions from Milan Pact cities was also published in September, titled The Role of Cities in the Transformation of Food Systems: Sharing lessons from Milan Pact cities. Four trends were identified from Milan Pact cities that together present a progressive, cumulative potential for systemic transformation of food systems, powered by new collaborations of urban and territorial governments, including actors in civil society and the private sector.

Four patterns in the evolution of urban food systems are discernible across global regions:

1. Cities have begun to integrate food security and nutrition with other urgent priorities such as poverty, climate change, migration, economic development, and civic engagement, among others.
2. Cities typically enter food systems through one or two entry points such as health, economic development (jobs), land-use planning, food safety, markets, sanitation, etc. However, many cities have begun to take a more integrated governance approach through mechanisms linking departments and creating cross-jurisdictional institutional arrangements in shaping municipal food governance.
3. As cities embrace the full breadth and inherent complexity of a food system approach, including primary production, distribution, storage, processing, marketing and food waste management, local governments increasingly recognize the need to strengthen urban-rural linkages in diverse and synergistic ways.
4. In the food systems linking urban areas to their surrounding rural areas, food producers, food businesses, and many other actors from civil society, the private sector, and civic and research institutions are increasingly recognized by local governments as essential participants in food policy and practice through partnerships and alliances.

Cities are taking initiative, but they also face enormous challenges. The most critical are weak governance structures, insufficient or low resources and capacity, lack of professional training, and persistent conflict and lack of coherence between sectors, actors and jurisdictions. These challenges are recognized in the new normative global agendas agreed to by national governments (SDGs and NUA), but there will have to be contextually relevant, locally adapted, better supported implementation efforts in food governance.

As some visionary movements and policy processes envision, the world could be approaching new, more inclusive and better-balanced systems of sustainable cities and towns of different scale – together with functional territories that are no longer separate urban and rural spaces. The reality of dynamic, fluid, and mutually interdependent social, economic and environmental interactions between places where the human built environment is sustainable and places where the natural unbuilt environment is sustainable, will become structurally necessary as the foundation for the future of humanity and the planet.

1.7 FAO - Getting Cities on the Food and Agriculture Agenda

Florence Egal, Food security and nutrition expert, sustainable diets and local food systems, ex-co-secretary Food for Cities, Food and Agriculture Organization of the United Nations (FAO)

In the context of Agenda 2030 and the New Urban Agenda, the UN Food and Agriculture Organization (FAO) is implementing a variety of urban-related projects and initiatives and is presently finalizing its urban food agenda and programme of action. But, like most major institutional changes, this should be seen within a long-term perspective.

FAO started addressing the interface between urbanization and food and agriculture in the late 80s. Urban food consumption, urban and peri-urban agriculture, street foods, food supply and distribution systems and urban forestry became the object of technical work and projects. But coordination remained informal and led by a network of interested professionals in Headquarters, Regional offices and countries, supported by senior management from three technical departments (Agriculture, Economic and Social, and Sustainable Development departments). This network expanded and worked in close collaboration with relevant external networks. The topic, however, remained marginal within the organization and faced strong internal opposition in a context of increased marginalization of rural areas.

A first FAO reform process led to the creation in the Medium Term Plan (MTP) 2002-07 of 16 Priority Areas for Interdisciplinary Action (PAIA) - among which Food for Cities - and support to related inter-departmental working groups. The objectives of the Food for Cities PAIA were "to enhance awareness of governments, municipal authorities and relevant institutions of urban and peri-urban food security, especially among poor households; to assist with safety, efficiency and sustainability of urban and peri-urban food and agricultural production and post-production systems; to ensure that the urban food system is an integral component of the national food supply and distribution system, taking into account the need to enhance rural and urban linkages; and to promote sound environmental policies concerning urban and peri-urban areas, while reducing urban food insecurity". Its priorities included "delivering publications on appropriate planning and policy frameworks for urban food systems as well as electronic, audio-visual and other communication materials to sensitize policy makers, technical managers and stakeholders on key issues; holding regional and national workshops to raise awareness and promote effective development planning across the rural-urban continuum; disseminating proven technologies and best practices; providing information and training materials for capacity building and support to training courses at different levels as well as an interactive website and implementation of a coherent communication strategy on Food for the Cities; and active participation in international networks and fora".

Thus, every second year, FAO participated in UN-Habitat World Urban Fora, from Nairobi in 2002 to Kuala Lumpur in 2018, co-organizing with partner institutions side events on relevant themes (e.g., food security, nutrition, urban agriculture). Food for Cities also attracted external funding for specific projects and documents (e.g., World Bank, IDRC), all of which eventually fed back into a multi-disciplinary position paper Food, Agriculture and Cities - Challenges of food and nutrition security, agriculture and ecosystem management in an urbanizing world.[12]

FAO also actively participated in the development of the "Strategy, Meeting Humanitarian Challenges in Urban Areas" adopted by the Inter-Agency Standing Committee (IASC) in November 2010, and set up the Food for Cities Dgroup[13] in the wake of the inter-institutional preparatory meeting it hosted in 2009. This online platform now serves a network of over 2,500 members from 114 countries, including a global network of experts, from development practitioners to academia, connecting research and practice on sustainable food systems and urbanization.

But changes in FAO senior management and staff subsequently led to a decline in resources, visibility and awareness of the work done. The decision to hold the Universal Exposition in Milan in 2015 and the theme "Feeding the Planet Energy for Life" unexpectedly reversed the tide FAO senior management engaged with the Barilla Center for Food & Nutrition (BCFN) presented the Milan Protocol earlier this year as a proposal seeking global commitment to fight food waste, hunger and obesity, promoting healthy lifestyles and sustainable agriculture practices. Martina spoke of the related Carta di Milano as Expo's "immaterial legacy".

The announcement made by the Mayor of Milan at the February 2014 C40 Summit in Johannesburg of his decision to launch a pact aimed at tackling food-related issues came as a – welcome - surprise. Food for Cities staff were actively involved in reviewing cities experiences and drafting the pact itself, and a Letter of Agreement was eventually signed on May 2016 to provide technical support to the Milan Urban Food Policy Pact secretariat. The Director General of FAO Jose Graziano da Silva attended the signing of the Pact by over 100 cities on October 15 and joined Mayor Pisapia the following day when the pact was handed to the UN Secretary General Ban Ki Moon on the occasion of World Food Day. The MUFPP was a major turning point for FAO as the political levels of the organization became involved. The second Mayors summit was hosted at FAO Headquarters in Rome, FAO was heavily involved in the organization of the 3rd Annual Gathering and Mayors Summit in Valencia and was present at the 4th Annual Gathering in Tel Aviv in September 2018.

In parallel, the organization of Habitat III resulted in increased attention towards food and agriculture considerations within the New Urban Agenda adopted in Quito in October 2016, paving the way to further FAO-UN Habitat collaboration, but also raised awareness of the synergy between SDG2 and SDG11, and the role of municipalities and local governments in the 2030 Agenda.

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[12] http://www.fao.org/3/a-au725e.pdf

[13] http://www.fao.org/fcit/fcit-contacts/dgroups-list/en/

1.8 The United Nations Decade of Action on Nutrition: the Potential to Support Urban Food Environments

Simona Seravesi, Independent Nutrition Consultant Trudy Wijnhoven, Food and Agriculture Organization of the United Nations (FAO)

In April 2016, the United Nations (UN) General Assembly, through its Resolution 70/259,[14] endorsed the outcomes of the 2014 Second International Conference on Nutrition (ICN2) and proclaimed 2016 to 2025 the Decade of Action on Nutrition ("Nutrition Decade"). The Resolution also called upon the Food and Agriculture Organization of the United Nations (FAO) and the World Health Organization (WHO) to lead the implementation of the Nutrition Decade in collaboration with the World Food Programme (WFP), the International Fund for Agricultural Development (IFAD) and the United Nations Children's Fund (UNICEF), and to identify and develop a work programme based on the Rome Declaration on Nutrition and its Framework for Action, using coordination mechanisms such as the UN Standing Committee on Nutrition (UNSCN) and multi-stakeholder platforms such as the Committee on World Food Security (CFS). The Nutrition Decade provides all stakeholders with a unique time-bound opportunity to strengthen joint efforts to implement the ICN2 commitments and the nutrition-related SDGs.[15]

Poor dietary habits are among the top leading risk factors for global health and global disease burden. Food systems and the way they are set up to provide healthy diets are a key driver of malnutrition in all its forms. In 2017, nearly 821 million people were undernourished, nearly 151 million children under five suffered from stunting, over 38 million children under five were overweight, and 672 million adult people were obese. Wasting continues to affect over 50 million children under five in the world. For the world to meet the ICN2 commitments, the 2025 World Health Assembly (WHA) global nutrition targets, the global diet-related non communicable diseases (NCD) targets, and the nutrition-relevant targets in the 2030 Agenda for Sustainable Development, prioritized and accelerated action-oriented efforts within the Nutrition Decade are urgently needed.

The Nutrition Decade embraces six cross-cutting, integrative areas for impact, derived from the ICN2 recommendations and in line with the SDGs. The six areas are:

1. Sustainable, resilient food systems for healthy diets;
2. Aligned health systems providing universal coverage of essential nutrition actions;
3. Social protection and nutrition education;
4. Trade and investment for improved nutrition;
5. Safe and supportive environments for nutrition at all ages; and
6. Strengthened governance and accountability for nutrition.

The ICN2 Framework for Action presents recommendations to be implemented to ensure that food systems become more sustainable and promote healthy diets, and to enhance sustainable food systems through coherent public policies across relevant sectors, from production to consumption, to meet people's nutritional needs. The Nutrition Decade can be utilized as a policy framework to align policies and initiatives already in place with the aim to create a healthy urban food environment.

The Nutrition Decade provides countries with mechanisms such as Action Networks, which are informal groups of countries intended to accelerate and align efforts around a specific topic linked to an action area of the Nutrition Decade. They are used to advocate for the establishment of policies and legislation, exchange of good practices and experiences, illustrate successes and lessons learned, and provide mutual support to accelerate progress in specific areas with the final objective of improving food systems, diets and nutrition for all. An Action Network may be a good way to share information about relevant initiatives and work, and to establish connections between experts, for instance by organizing network meetings for people working with sustainable seafood production, nutrition and health, developing policy management and enforcement.

Several Action Networks have already been established by countries or are in the process of being established under the umbrella of the Nutrition Decade: Norway – sustainable food from the oceans and inland waters for food security and nutrition; Chile – healthy food environment; Fiji – childhood obesity in the Pacific; Brazil/Uruguay – promoting food-based dietary guidelines for the prevention of obesity and reduction of NCDs; Brazil/Costa Rica/Colombia – reducing sodium consumption in order to prevent and control cardiovascular disease; France/Australia – nutrition labelling; and Germany – healthy school meals.

The Nutrition Decade is intended to build on existing efforts and promote alignment among actions and actors. The Milan Urban Food Policy Pact may be conducive to ensuring greater emphasis on the importance of nutrition within the UN New Urban Agenda. It would be crucial to foster the translation of the establishment of Action Networks into concrete, nationally-locally determined commitments, policies and actions, by facilitating bilateral and multilateral city interactions and convening through the Action Network, to leverage city expertise and knowledge with a participatory approach. It would also be important to identify and support key areas for the implementation of the Action Networks, including modalities of engagement and roles of Member States and other stakeholders, as well as the tools for driving action (means of implementation). Therefore, it could be interesting to support research needs in order to help city governments connect bottom-up and top-down food initiatives and include different types of actors, including the private sector.

The way most food systems are currently set up is inadequate to provide healthy diets. Nutrition challenges faced by countries continue to evolve and grow, especially in the urban context. The Nutrition Decade helps to highlight the urgency of this situation also by maximizing participation and orienting the process towards uniformed and aligned goals and objectives. Based on this scenario, the opportunity of the Nutrition Decade to support the urban food environment should not be missed.

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[14] UN (2016). Resolution adopted by the General Assembly on 1st April 2016. Available at: http://undocs.org/A/RES/70/259

[15] https://www.un.org/nutrition/home

1.9 The Need for Sustainable Diets

Katarzyna Dembska, Marta Antonelli, Barilla Center for Food & Nutrition

In addition to rapid population growth, many parts of the world are facing unprecedented urbanization trends. In 1900 just 15 percent of the world's population lived in urban areas. The growth pace accelerated rapidly in the 20th century, and in 2007, for the first time in human history, more than half of the world's population was urban. This proportion is expected to reach 68 percent by 2050.[16,17]

SDG 11 (Make cities inclusive, safe, resilient and sustainable) recognizes within its targets the acute challenges many cities around the world are facing, but the connection between the consequences of rapid urban growth, food systems, and sustainable diets needs to be explicitly highlighted and addressed with the development, implementation, and monitoring of food-related solutions. Healthy and sustainable food systems can be considered as direct or indirect pre-requisites of all the SDGs.

Poverty, food insecurity, lifestyle changes, and unsustainable food production and consumption are in fact profoundly affecting the well-being of urban populations, which also face increased vulnerability to the impacts of climate change. In 2017, the number of undernourished people worldwide rose to 821 million, up from 804 million in 2016, with climate change, migration and conflicts playing a major role in driving this growth.[18] Stunting has moved to cities, with one in three stunted children now living in an urban area.[19] The agri-food sector is also faced with the challenge of providing adequate and nutritious food for all, with cities being responsible for up to 70 per cent of global GHG emissions while occupying just 2 per cent of global land area.[20]

The increase in income has been shown to be a driver of an increase in the demand for diets high in meat, dairy, oil, salt, and processed foods[21]. At the same time, the globalization of the food system has contributed to environmental degradation and biodiversity loss, while lowering prices for diets high in energy but low in variety and important nutrients.[22] Overweight, obesity and lifestyle-related non communicable diseases (NCDs) such as cardiovascular disease, diabetes, and hypertension are increasing across low-, middle-, and high-income countries.[23] Diet-related NCDs are increasing rapidly in low- and middle-income countries[24] , where approximately 80% of the global deaths from NCDs occur.[25]

With the UN Decade of Action on Nutrition and the 2030 Agenda for Sustainable Development, sustainable diets are gaining increased attention and present an opportunity to successfully advance commitments to sustainable development, eliminate poverty and food insecurity,[26] and address the health and environmental impacts of the current urban lifestyle. As defined by the FAO and Biodiversity International,[27] "Sustainable diets are those diets with low environmental impacts which contribute to food and nutrition security and to healthy life for present and future generations." As such, their active promotion is fundamental in order to reach targets of the 2030 Agenda for Sustainable Development as well as those of the Paris Agreement.

In a context of sufficient access and availability of food, the strategies to reduce GHG emissions and

lower the burden on environmental resources through food-related actions include reducting the intake of meat (and dairy products) as well as reducing overconsumption by only eating enough food to provide the energy required to maintain a healthy weight. These actions could have wide-ranging societal benefits for both human health and the environment,[28,29] but changing well-established dietary habits dominated by animal-based products will not be easy, especially if we consider that understanding of sustainable diets is still poor and there are many misconceptions in how they are defined and applied.[30]

Importantly, the link between nutrition and the environment is bidirectional. Eating patterns impact the environment, but the environment can also impact dietary choices. Besides the above-mentioned effects on human health and the environment, sustainable diets can be considered a precondition for long-term food security.[31] The environment, and especially climate and the health of natural resources in terms of quality and quantity, are a precondition for the availability of food as well as the preservation of biodiversity.[32] Education is key to improving understanding of this bidirectional link.

For these reasons, sustainable diets must be part of a comprehensive strategy to enhance food security and nutrition, improve the livelihood of food producers, support economic development, reduce climate impact, and restore the ecosystem. This requires profound transformation and the engagement of all stakeholders in society. Cities are key actors in pushing forward this transition towards a healthy and sustainable world for global citizens in the present and future generations.

NOTES

[16]Xing Quan Zhang. The trends, promises and challenges of urbanisation in the world. Habitat International, Volume 54, Part 3, 2016, p. 241-252, ISSN 0197-3975, https://doi.org/10.1016/j.habitatint.2015.11.018.

[17] UNDESA, World Urbanisation Prospects, the 2018 Revision.https://www.un.org/development/desa/en/news/population/2018-revision-of-world-urbanization-prospects.html

[18] FAO, IFAD, UNICEF, WFP and WHO. The State of Food Security and Nutrition in the World 2018. Building climate resilience for food security and nutrition. Rome, 2018 [FAO].

[19] Ruel, Marie T., Garrett, James. L. and Yosef, Sivan (2017). Food security and nutrition: Growing cities, new challenges, ch. 3, p. 24-33, in 2017 Global Food Policy Report, International Food Policy Research Institute (IFPRI).

[20] United Nations Human Settlements Programme (UN-Habitat), 2011

[21] Macdiarmid J, Kyle J, Horgan G, Loe J, Fyfe C, Johnstone A, McNeill G. Livewell: a balance of healthy and sustainable food choices. Project report. London: World Wildlife Federation-UK; 2011.

[22] Foresight. The future of food and farming.Final Project Report. London: Government Office for Science; 2011.

[23] Alleyne G, Binagwaho A, Haines A, Jahan S, Nugent R, Rojhani A, Stuckler D. Lancet NCD Action Group. Embedding non-communicable diseases in the post-2015 development agenda. Lancet 2013;381:566–74.

[24] Lachat C Otchere S Roberfroid D et al.Diet and physical activity for the prevention of noncommunicable diseases in low- and middle-income countries: a systematic policy review.PLoS Med. 2013; 10: e1001465

[25] World Health Organization. Global status report on noncommunicable diseases 2010. Florence: World Health Organization; 2011.

[26] Jessica L. Johnston, Jessica C. Fanzo, Bruce Cogill.Understanding Sustainable Diets: A Descriptive Analysis of the Determinants and Processes That Influence Diets and Their Impact on Health, Food Security, and Environmental Sustainability.Advances in Nutrition, Volume 5, Issue 4, 1 July 2014, p. 418–429,https://doi.org/10.3945/an.113.005553

[27] FAO Proceedings of the International Scientific Symposium. Biodiversity and Sustainable Diets 2010; FAO 2012

[28] Sustainable Development Commission (2009). Setting the Table: Advice to Government on Priority Elements of Sustainable Diets. http://www.sd-commission.org.uk/data/files/ publications/Setting_the_Table.pdf

[29] Garnett T (2008). Cooking Up a Storm: Food, Greenhouse Gas Emissions and Our Changing Climate. Surrey: University of Surrey, Food Climate Research Network, Centre for Environmental Strategy.

[30] Macdiarmid, J. (2013). Is a healthy diet an environmentally sustainable diet? Proceedings of the Nutrition Society, 72(1), 13-20. doi:10.1017/S0029665112002893

[31] Berry E, Dernini S, Burlingame B, Meybeck A, Conforti P. Food security and sustainability: Can one exist without the other? Public Health Nutrition; 2015; 18(13), 2293–2302. doi:10.1017/S136898001500021X.

[32] L, McGuire S. Fatal gaps in seed security strategy. Food Sec 2012; 4, 569–579

1.10 Cities, Nutrition and SDGs

James Garrett, Bioversity International
Stineke Oenema, UN Standing Committee on Nutrition

The dynamics of urbanization and urban life create complex challenges to good nutrition as well as significant opportunities to end malnutrition in all its forms for people of all ages. Cities and other urban settlements face the full array of nutrition problems, including undernutrition, nutrient deficiencies, and overweight and obesity.

Municipal and regional authorities as well as national governments and the international community have recognized the key role that cities and urban settlements play in addressing nutritional challenges (e.g., The New Urban Agenda, Milan Urban Food Policy Pact). The diversity contained in cities and communities, across populations, infrastructure, and services, is stunning. Considering averages alone can hide the problems as well as the solutions that such diversity holds.

Dietary patterns seem to be emerging as the biggest challenge to the future prospect of good nutrition in urban areas. Food systems and dietary patterns are changing as economies develop, as people move into cities, and as global connections become tighter. Urban environments allow for both specialization and provision of a wider range of food and delivery options for urban consumers but, for social, economic and accessibility reasons, the wider range of food choices in a city is not available to everyone. Some neighbourhoods may exist as "food deserts" with no easily accessible supermarkets. Due to formal and informal work and other demands, other families may not have the time to shop and cook. In both cases, families may then rely on street foods, fast-food restaurants, or other highly processed and prepared foods as significant components of their diets. Critically, the biggest driver of diet changes is the penetration of modern food supplies with processed and ultra-processed foods that are energy-dense but nutrient poor – all convenient, attractive, and tasty, and subject to aggressive marketing. These foods are often cheaper than healthy, fresh foods. The multiple food systems within a city as well as issues of food safety pose enormous policy challenges.

Urban growth increases food demand and spurs dietary changes — new demand can create opportunities for rural producers to improve their livelihoods and can promote holistic approaches to natural resource management. Meeting the urban food and nutrition challenge has been a major driver behind an emphasis on territorial planning. Such planning needs to find ways to make the food system sustainable and be better able to offer healthier and more nutritious choices. Integrated territorial planning creates linkages between rural and urban stakeholders, can support integrated value chains across the rural-urban continuum and promote diets based around nutritious,

diverse and locally produced food. Investment in rural infrastructure and intermediate towns — quality rural and feeder roads, electricity, storage facilities, communications and information — builds connections and creates hubs of economic activity benefiting smallholder producers and cities. This is especially important because, in the future, most urbanization is expected in small towns and medium size cities, and since the rural people in the spaces between towns and cities provide most of the water, energy, food and fibre for human settlements. Planning also needs to consider the factors that contribute to poor nutrition (water and sanitation, health care).

In that perspective, the UN Standing Committee on Nutrition organized an Expert Group Meeting (EGM) linking nutrition with the SDGs that were under review in 2018 (SDG6, SDG7, SDG11, SDG12 and SDG15) with the objective to provide concrete, actionable nutrition inputs into the 2018 High Level Political Forum (HLPF), linking with the 2030 Agenda[33]. A background document entitled "Nutrition and SDG11: Make Cities and Human Settlements Inclusive, Safe, Resilient and Sustainable" was prepared by the Consultative Group for International Agricultural Research (CGIAR). The main recommendations of the meeting were the following:

1. Applying a nutrition lens and putting people and their needs at the centre, SDG 11 should ensure the incorporation of nutrition in its scope of action. This implies planning for nutrition-related provision of accessible infrastructure and services and the creation of inclusive, just, and sustainable nutritious food systems for healthy diets that avoid waste and environmental harm.
2. To achieve inclusive sustainable cities, actions to achieve the targets should take into account the heterogeneity of conditions and populations found in urban areas. Authorities should seek convergence and coherence across interventions in the different sectors and levels of government, encouraging interdepartmental and cross-sectoral coordination. Programmatic convergence, involving creation of decent employment, provision of essential services in health, transport, energy, and water and sanitation, will help to address the determinants of nutrition effectively and, importantly, at the same time.
3. No populations or geographies should be left behind. Actions should meaningfully and effectively include people of diverse needs and backgrounds, including the poor, women, older persons, and persons with disabilities. All stakeholders in improving nutrition should be involved, including the private sector, civil society, consumers and producers, through participatory processes where the voices of the less powerful are heard and taken into account.
4. Solutions require local leadership and governance to address the dynamics, diversity, and uniqueness across geographies. Efforts must be made to acquire and use evidence to provide a complete picture of the problem and solutions.
5. Policies should also dynamically integrate local and regional economies, linking urban, peri-urban, and rural areas, working to mitigate and adapt to climate change and valuing a region's traditions and agrobiodiversity.

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[33] UNSCN (2018). Expert Group Meeting on Nutrition and SDGs under Review in Preparation for the High-Level Political Forum: meeting report. Available at: https://www.unscn.org/uploads/web/news/Final-Report-of-EGM-on-nutrition.pdf

1.11 UN Habitat. Strengthening Urban-Rural Linkages for Improved Food Nutrition and Security

Stephanie Loose, Grace Githiri, Andrea Oyuela, Remy Sietchiping, UN Habitat

The New Urban Agenda (NUA)[34], adopted by United Nations Member States in Quito, Ecuador, in October 2016, underlines the importance of integrating food and nutrition in urban and territorial planning. Strengthening urban-rural linkages is one strategy to contribute to sustainable and integrated territorial development and enhancing food and nutrition security in both urban and rural areas.

Strengthening urban-rural linkages can be achieved from different entry points[35], among them understanding the spatial flows of people, products, services and information – from rural to urban, but also from urban to rural areas – and strengthening the capacities of small and intermediate towns (as markets, for food processing, transport and distribution, providing access to non-farm employment opportunities, information on prices and marketing as well as financial, social and administrative services[36]) among others. Strengthening urban-rural linkages is a multilayer concept that highlights the importance of a territorial approach for the protection of natural assets such as land (soil), water and air, which determine food production as well as the need for inclusive investments and finance strategies to reduce the urban-rural development gap and increase economic development across the urban-rural continuum.

Mainstreaming food and nutrition in (national, regional and "urban" development) plans, strategies and policies requires an integrated approach comprising planning across administrative boundaries, the inclusion of multiple stakeholders from both urban and rural areas, and cooperation across different government levels and with civil society, private sector and academia as presented in the UN-Habitat's International Guidelines for Urban and Territorial Planning (IG-UTP)[37]. The integrative approach promoted in the Guidelines (IG-UTP) can be applied when integrating food and nutrition systems into urban and territorial planning, since the responsibilities of the different key players are clearly indicated in the different chapters.

While the IG-UTP focus on planning, the Guiding Principles for Urban-Rural Linkages[38] include practical recommendations for action for economic, social and environmental development in an accompanying framework and underline the importance of enhancing synergies between urban and rural areas, and in particular fostering urban-rural partnerships, which are crucial for food security and the promotion of locally produced foods.

Mainstreaming urban-rural linkages in national urban policies or development plans is also a key component, impacting not only food systems in urban areas but also at regional level. Building up and

strengthening local capacities – both on the planning side but also of key actors for food and nutrition systems – will enable change agents to develop and implement long term and sustainable solutions for improving food and nutrition security in both urban and rural areas – to ensure that no-one and no-space is left behind.

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[34] UN (2016) at HABITAT III. New Urban Agenda: Available at: http://habitat3.org/wp-content/uploads/NUA-English.pdf

[35] UN-Habitat (2017). Implementing the new Urban Agenda by strengthening Urban-Rural Linkages. Available at: https://unhabitat.org/books/implementing-the-new-urban-agenda-by-strengthening-urban-rural-linkages/

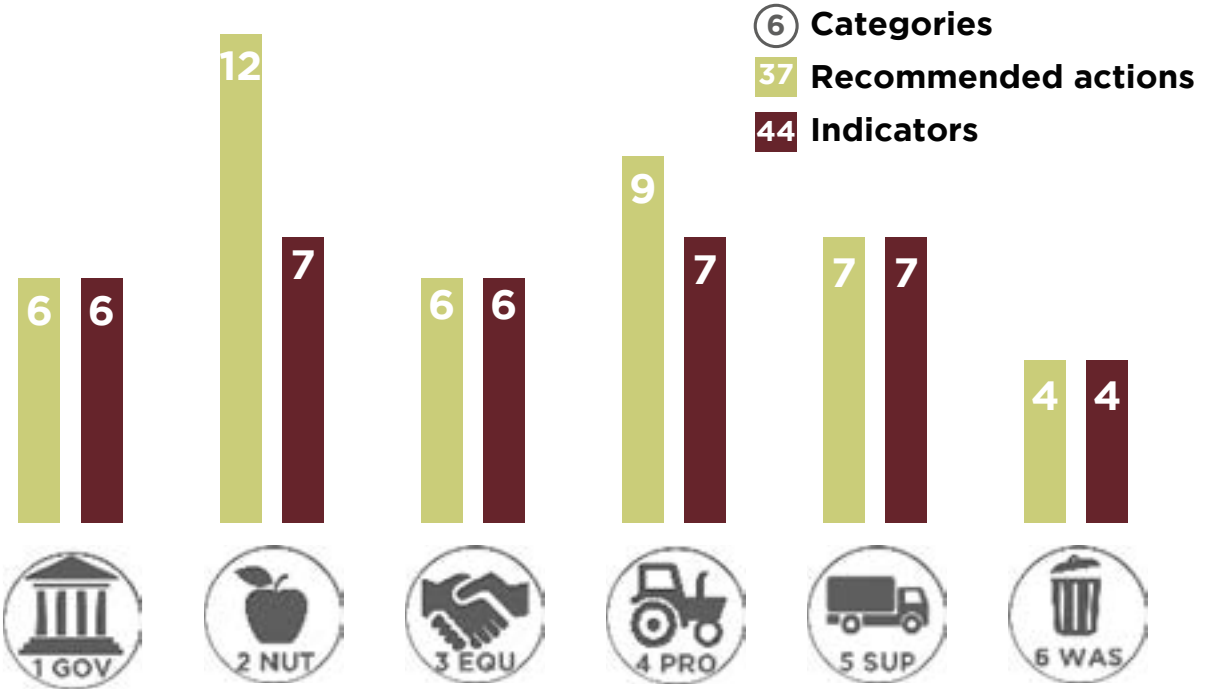
[36] Please also see UN-Habitat's contribution to the Regional Development Dialogue RDD, vol. 35, 2014 on "The Role of Small and Intermediate Cities in Enhancing Urban-Rural Linkages for sustainable Urbanization."

[37] UN-Habitat (2015). International Guidelines on Urban and Territorial Planning. Available at: https://unhabitat.org/books/international-guidelines-on-urban-and-territorial-planning/ The IG-UTP are a globally applicable tool to improve strategies and practices for sustainable urban and territorial planning.

[38] Guiding Principles for Urban-Rural Linkages: developed in a participatory process convened by UN-Habitat and including 125 stakeholders, for more information, please check www.urbanrurallinkags.wordpress.com

SUSTAINABLE DEVELOPMENT GOALS

MILAN URBAN FOOD POLICY PACT



2. MONITORING: FRAMEWORKS & INDICATORS

This section focuses on the work carried out to create a monitoring framework that makes it possible to see the progress of urban food policies in different cities

FAO - MUFPP
Monitoring Framework

MUFPP Category n.1

Governance

Indicators	SDG Targets
Indicator 1: Presence of an active municipal interdepartmental government body for advisory and decision making of food policies and programmes	
Indicator 2: Presence of an active multi-stakeholder food policy and planning structure	16.6 - 16.7
Indicator 3: Presence of a municipal urban food policy or strategy and/or action plans	
Indicator 4: Presence of an inventory of local food initiatives and practices to guide development and expansion of municipal urban food policy and programmes	16.10

Indicator 5: Presence of a mechanism for assembling and analysing urban food system data to monitor/evaluate and inform municipal policy making on urban food policies	16.10
Indicator 6: Existence of a food supply emergency/food resilience management plan for the municipality (in response to disasters; vulnerabilities in food production, transport, access; socio economic shocks, etc.) based on vulnerability assessment	

MUFPP Category n.2

Sustainable Diets & Nutrition

Indicators	SDGs Targets
Indicator 7: Minimum dietary diversity for women of reproductive age	2.1
Indicator 8: Number of households living in “food deserts”	2.2
Indicator 9: Costs of a nutritious food basket at city/community level	1.4
Indicator 10: Individual average daily consumption of meat	2.c
Indicator 11: Number of adults with type 2 diabetes	12.8 - 2.4
Indicator 12: Prevalence of stunting for children under 5 years	2.2 - 3.4
Indicator 13: Prevalence of overweight or obesity among adults, youth and children	2.2 - 3.4
Indicator 14: Number of city-led or supported activities to promote sustainable diets	2.2 - 3.4
Indicator 15: Existence of policies/programmes that address sugar, salt and fat consumption in relation to specific target groups	2.2
Indicator 16: Presence of programmes/policies that promote the availability of nutritious and diversified foods in public facilities	2.2
Indicator 17: Percentage of population with access to safe drinking water and adequate sanitation	2.2

MUFPP Category n.3

Social and economic Equity

Indicators	SDGs Targets
Indicator 18: Percentage of food insecure households based on the Food Insecurity Experience Scale (FIES)	6.1
Indicator 19: Percentage of people supported by food and/or social assistance programmes	2.2
Indicator 20: Percentage of children and youth (under 18 years) benefitting from school feeding programmes	2.2
Indicator 21: Number of formal jobs related to urban food system that pay at least the national minimum or living wage	2.3 - 8.3
Indicator 22: Number of community-based food assets in the city	2.1
Indicator 23: Presence of food-related policies and targets with a specific focus on socially vulnerably groups	1.3 - 1.b - 2.1 - 2.2 - 12.3
Indicator 24: Number of opportunities for food system-related learning and skill development in i) food and nutrition literacy, ii) employment training and iii) leadership	4.7

MUFPP Category n.4

Food Production

Indicators	SDGs Targets
Indicator 25: Number of city residents within the municipal boundary with access to an (urban) agriculture garden	11.a
Indicator 26: Presence of municipal policies and regulations that allow and promote agriculture production and processing in the municipal area	11.a
Indicator 27: Surface area of (potential) agricultural spaces within the municipal boundary	11.a - 15.5 - 15.9
Indicator 28: Proportion of total agricultural population –within the municipal boundaries- with ownership or secure rights over agricultural land for food production, by sex	2.3 - 15.5 - 15.9
Indicator 29: Proportion of agricultural land in the municipal area under sustainable agriculture	11.a - 2.4 - 15.5 - 15.9
Indicator 30: Number of urban and peri-urban food producers that benefited from technical training and assistance in the past 12 months	2.4

Indicator 31: Number of municipal food processing and distribution infrastructures available to food producers in the municipal area	11.a
Indicator 32: Proportion of local/regional food producers that sell their products to public markets in the city	11.a
Indicator 33: Annual proportion of urban organic waste collected that is re-used in agricultural production taking place within municipal boundaries	12.5

MUFPP Category n.5

Food Supply & Distribution

Indicators SDGs Targets

Indicator 34: Existence of policies/programmes that address the reduction of GHG emissions in different parts of the food supply chain	13.2
Indicator 35: Presence of a development plan to strengthen resilience and efficiency of local food supply chains logistics	11.b
Indicator 36: Number of fresh fruit and vegetable outlets per 1000 inhabitants (markets and shops) supported by the municipality	2.2
Indicator 37: Annual municipal investment in food markets or retail outlets providing fresh food to city residents, as a proportion of total (investment) budget	2.2
Indicator 38: Proportion of food procurement expenditure by public institutions on food from sustainable, ethical sources and shorter (local/regional) supply chains	12.7
Indicator 39: Presence of food safety legislation and implementation and enforcement procedures	
Indicator 40: Existence of support services for the informal food sector providing business planning, finance and development advice	

MUFPP Category n.6

Food Waste

Indicators SDGs Targets

Indicator 41: Total annual volume of food losses & waste	4.7 - 12.3
Indicator 42: Annual number of events and campaigns aimed at decreasing food loss and waste	4.7 - 12.3
Indicator 43: Presence of policies or regulations that address food waste prevention, recovery and redistribution	12.3
Indicator 44: Total annual volume of surplus food recovered and redistributed for direct human consumption	12.3

2.1 Fostering Territorial Perspectives for Achieving the SDGs

Elodie Valette, Jean-Michel Sourisseau, Cirad
Thierry Giordano, Food and Agriculture Organization of the United Nations (FAO)

The 17 Sustainable Development Goals (SDGs) have been purposely designed as both universal and interdependent. It is an extraordinarily ambitious agenda, even more so when it comes to implementation, since the SDGs are eventually highly localized. There is a critical need to understand and take into account on the one hand how urbanization processes shape the future of rural areas, and on the other hand how changing rural areas influence the sustainability of urbanization processes. Because neither cities not rural areas will ever be sustainable if their counterpart is not sustainable as well. Territorial perspectives on development have been spreading within international organizations and among development partners, and they align naturally with the MUFPP Framework of Action. They are increasingly recognized as a powerful tool for meeting development outcomes. Why is this so?

A territorial perspective considers a territory as a space of governance for human activities where future projects, programmes and policies are conceived and implemented. A territory is therefore seen as a relevant functional space that makes sense for local actors and responds to collectively identified development challenges, not limited to pre-existing administrative boundaries. It includes all the environmental, social, political, cultural and economic assets and processes interacting within it.

A territorial perspective also anchors development strategies to specific territorial assets and interdependencies between different places, including rural-urban linkages, as highlighted by the New Urban Agenda, and supported by the UN-Habitat Guidelines for Urban and Territorial Planning[39] and the Guiding Principles for Urban-Rural Linkages.[40] It relies on a participatory diagnosis and analysis of potentialities and constraints on an adequate scale. It acknowledges priorities, potentials, and opportunities in a long-term perspective. This makes it possible to articulate and integrate sectoral policies on relevant scales of action within the territory.

A territorial perspective takes into consideration multiple levels of spatial organization, connecting local, regional, national and international scales, and taking into account the effects and impacts of globalization. This calls for a paradigm shift from the governance of disconnected rural and urban spaces and separate authorities, to one based on multi-stakeholder governance mechanisms that allow all groups of actors to take part in the decision-making process across sub-national and national levels of government.

A territorial approach goes beyond biophysical approaches. It embraces integrated landscape management, which considers the socio-ecological dimension of interactions between species and ecosystems,

as well as the socio-economic dimensions of the use of natural resources. Moreover, it recognizes the fact that human settlements of various sizes are embedded within a bigger landscape and the reciprocal dynamics between these spaces.

With this common understanding, a coalition of actors[41] has recently called for an international alliance for territorial approaches to sustainable development aimed at:

(i) Promoting and raising awareness on territorial approaches as a means for the implementation and measurement of the progress and the concrete achievement of the SDGs, the Paris agreement, and the New Urban Agenda;

(ii) Engaging development partners (governments, academia, civil society organizations, regional organizations) to mainstream territorial approaches in their programs;

(iii) Mobilizing multi-disciplinary research to enhance the knowledge base and strengthen the theoretical and operational framework, as well as tools and methodologies to build a sound theory of change and support the paradigm shift based on proven and successful practices;

(iv) Building the capacities of and empowering national and local institutions and actors, notably women and young people, to better participate in the design of their future.

(v) Meeting the coalition's goals would definitely foster the implementation of the 2030 Agenda. The coalition will organize a side event during the 2018 Global Landscape Forum in Bonn and reflect on an action plan for the coming months.

NOTES

[39] UN (2016) at HABITAT III. New Urban Agenda: Available at: http://habitat3.org/wp-content/uploads/NUA-English.pdf

[40] https://urbanrurallinkages.wordpress.com/

[41] These actors include FAO, OECD, UNCDF, NEPAD, EU Devco, GIZ, BMZ, AFD, CIRAD.

2.2 An Innovative Monitoring Framework to Support the Implementation of the MUFPP

Guido Santini, Michela Carucci, Thierry Giordano, Food and Agriculture Organization of the United Nations (FAO)
Marielle Dubbeling, Resource Centres on Urban Agriculture and Food Security (RUAF) Foundation

The Milan Urban Food Policy Pact (MUFPP), launched in 2015 by cities and for cities, includes a comprehensive framework of actions aimed at guiding cities in "developing sustainable food systems that are inclusive, resilient, safe and diverse, that provide healthy and affordable food to all people in a human rights-based framework, that minimize waste and conserve biodiversity while adapting to and mitigating impacts of climate change".

While cities are increasingly developing policies, programmes and projects to meet this goal, many have requested the identification of measurable indicators as a means to include food in the urban agenda, to set targets and monitor progress for better informed policy, to mobilize internal and external resources, to engage with food system stakeholders at different levels of governments, as well as to communicate and share evidence-based experiences.

The MUFPP Secretariat and FAO have joined forces since 2016 to work on an innovative monitoring framework in line with cities' demands, capabilities and administrative obligations. FAO and the MUFPP Secretariat, jointly with the RUAF Foundation, have worked together in developing a comprehensive and reliable framework to build and monitor urban food policies.

MUFPP cities were involved throughout the design process to make sure the indicators responded to their needs. The process started with an expert consultation in Rome in April 2016 at FAO with international experts and representatives from signatory cities to define an approach in developing the framework and start identifying key targets and areas of action to be monitored. MUFPP signatory cities were then involved through two surveys to assess their priorities and data availability. The results of the surveys were discussed in October 2016 in Rome at the 2nd MUFPP Annual Gathering. From this discussion, a first list of indicators was developed and presented in October 2017 in Valencia at the 3rd Annual MUFPP Gathering. A group of 14 cities volunteered to actively participate in the finalization of the monitoring framework – including the list of indicators and their methodological guidelines –, which was presented in October 2018 in Tel Aviv at the 4th MUFPP Annual Gathering.

The proposed monitoring framework is organized along the six categories of recommended actions stated in the MUFPP Framework of Action. At least one indicator for each of the 37 voluntary actions recommended within these six categories has been identified, for a total of 44 indicators formulated or adapted from existing indicator frameworks. To facilitate the use of these indicators by city officials, a set of guide-

lines has been developed. Each guideline contains information aimed at facilitating the use of the indicators by city officials: the rationale for selecting this indicator, how the indicator is constructed, a glossary to clarify technical terms, explanations on the types of data required, how these data could be collected, the expertise and resources needed, and examples of how some cities have already collected and analysed data and used this indicator. Each guideline also highlights the connections with the Sustainable Development Goals and Targets (SDGs).

It is now critical to understand how cities can make the best of this innovative monitoring framework. City-to-city cooperation between MUFFP members, coupled with FAO support to assist cities in developing countries, will facilitate the adoption of monitoring systems in cities and the collection of data based on the understanding of the local food dynamics, which will support the capacity of cities to develop effective and impactful food policies and transform their local food system for the well-being of their inhabitants. Implementation will also help to refine the monitoring framework, as cities will progressively have a better understanding of the food challenges they face.

NOTES

[42] MUFFP (2015). The Milan Urban Food Policy Pact. Available at: http://www.milanurbanfoodpolicypact.org/text/

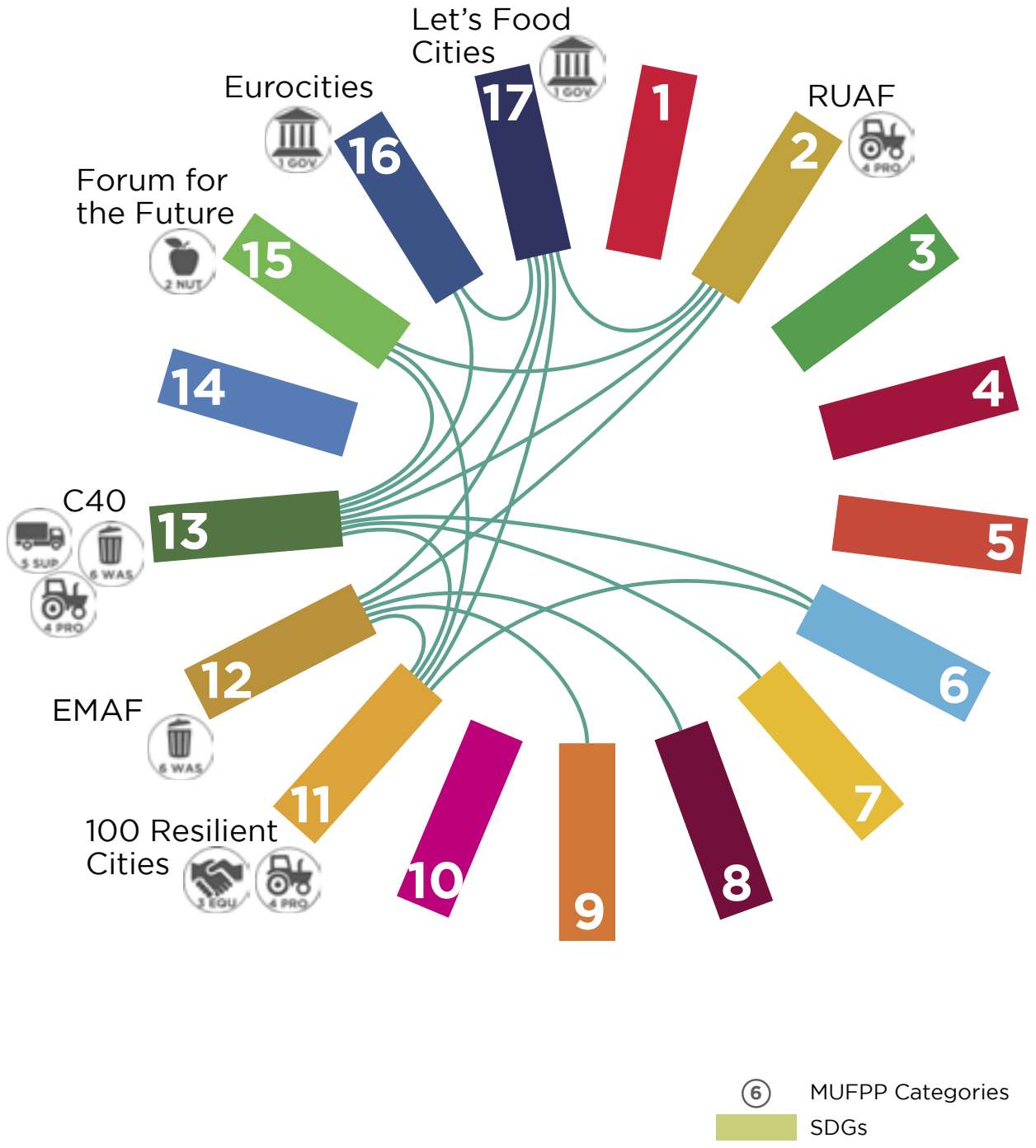
[43] FAO Team Working on the MUFPP Monitoring Framework. Report available at: http://www.milanurbanfoodpolicypact.org/wp-content/uploads/2017/12/FAO-Team-working-on-indicators.pdf

[44] Antananarivo; Austin; Copenhagen; Ede; Funchal; Ghent; Milan; Quito; Sao Paulo; Tirana; Toronto; Washington; West Sacramento; Windhoek

[45] The six categories are: 1. Governance; 2. Sustainable diets and nutrition; 3. Social and economic equity; 4. Food production; 5. Food supply and distribution; 6. Food waste.

[46] See the full list of indicators by category at http://www.milanurbanfoodpolicypact.org/milan-urban-food-policy-pact-monitoring-framework/

SDGs NETWORKS THEMATIC IMPACTS



3. ACTORS: NETWORKS & CITY ENABLERS

This section focuses on exploring the work that different networks are carrying out in their effort to develop sustainable food systems. Each network is committed to different aspects of sustainability and the aim is to explore them to gain a better understanding of how to achieve the SDGs

3.1 Cities Leading Food-Related Solutions towards achieving the SDGs

Anja De Cunto, EUROCITIES

EUROCITIES is a network of major European cities, bringing together the local governments of over 140 large cities in 45 European countries. The aim of EUROCITIES is to represent the interest of cities within European Union institutions and to facilitate the exchange of best practices and networking between city officials and politicians.

The network is divided into six thematic forums, from environment and mobility to culture, economic development, social affairs and the knowledge society. It also includes over 40 thematic Working Groups, which bring together city experts on specific topics.
The Working Group on urban food policy was launched in summer 2016 as a result of the Milan Urban Food Policy Pact and now includes 51 cities, led by the City of Milan via its Food Policy Office. In fact, during the Milan Urban Food Policy Pact drafting process, cities strongly supported the idea of tackling food system issues using urban-regional approaches.
It aims to promote the emerging role of local authorities on the topic of food policies at the EU level; to influence European legislation to facilitate the position of cities on food waste and the common agricultural policy; to create an area of discussion on food policies for cities to share; to create a stable and inclusive partnership among the working group cities to apply for funding opportunities.

Its members meet regularly to discuss specific aspects regarding food policy and actions: from food governance to job creation, research and innovation, linking the urban and rural areas, ethical trade, citizen engagement, procurement, food poverty, data collection, healthy diets and food waste, to mention a few.
The food working group participated in a small research project on behalf of the European Commission's directorate for Research and Innovation, which provided evidence of the food innovation dynamics in cities and the role and impact of European funded projects for research and innovation in cities. Over forty cities from Europe and nine cities from across the globe participated in the study. Five cities were chosen for a more in-depth analysis of their food activities, which underlined how food actions can stem from different areas of activities and different departments.

The food working group is also involved in the European Union FOOD 2030 initiative, a dialogue platform promoting coherent research and providing an innovation policy framework for food and nutrition security. It participates in the EU platform on food losses and food waste, to better identify, measure, understand and find solutions to deal with food waste, together with key players from public and private sectors. It also supports the activities of IPES, the International Panel of Experts on Sustainable Food

Systems, and their advocacy for the creation of a common, integrated EU food policy that goes beyond the Common Agricultural policy.
Future plans include working more forcefully towards reforming the Common Agricultural Policy and the funds for rural development post 2020.

Since the beginning of 2018, EUROCITIES has been a member of the high-ranking multi-stakeholders' platform on Sustainable Development Goals created by the European Commission. Together with CEMR and the Committee of the Regions it encourages a strong urban dimension for the SDGs in Europe. Having seen the interest of its members, EUROCITIES will set up a task force on SDGs as a follow-up of this work. It will focus on how to localise SDGs, how to share the best means to explain SDGs to citizens and how to measure progress towards achieving the SDGs by integrating current measurement frameworks and standards.

3.2 Climate Change in Cities

Stefania Amato, C40 Cities Climate Leadership Group,
Zachary Tofias, C40 Food, Water and Waste Programme,
Emily Norford, Sudhvir Singh, EAT

What we eat matters for the health of both people and our planet. Food is at the heart of a global health crisis, driving a triple burden of malnutrition and an epidemic of non-communicable diseases and, according to the international research institute CGIAR, food systems contribute 19%-29% of global GHG emissions. There is new mayoral interest in food policy and municipal governments typically have strong authority over many aspects of urban food systems.

The C40 Food Systems Network, in partnership with EAT, was launched in June 2016 during the EAT Stockholm Food Forum. C40 is the premier network of the world's leading cities taking action to reduce greenhouse gas (GHG) emissions and climate risks. EAT adds expertise across the linkages between food, health, and sustainability, and facilitates connections to research, national governments, the private sector and civil society, in particular through facilitating convening platforms such as the annual EAT Stockholm Food Forum. C40 is also collaborating with the Ellen MacArthur Foundation to support cities to measure impacts of food consumption and investigate the opportunities of circular economy solutions for food systems.

The C40 Food Systems Network concretely aims to drive impact at the local level through the unlocking of barriers, the creation of enabling environments and by providing technical assistance and facilitating integrated strategies for low-carbon and healthy food production and consumption. Forty cities from five regions (Africa, East, Southeast Asia & Oceania, Europe, Latin America and North America) participate in the network, making it one of C40's most popular networks.

The Network, led by the City of Milan, is open to all C40 cities interested in food systems issues and works in collaboration with the Milan Urban Food Policy Pact. The network contains a diverse range of expertise and frequently holds webinars where cities present their policies and initiatives. Three Food Systems Network workshops have taken place in Stockholm, in conjunction with the 2016, 2017 and 2018 editions of the EAT Stockholm Food Forum.
Member cities are actively drawing inspiration and knowledge from Network interactions and replicating and adapting initiatives to their own contexts. Inspired by their participation in the Network, Paris became the first city to set ambitious food systems targets as part of their Climate Action Plan. For example, Paris intends to reduce food related GHG emissions by 40% and ensure that 20% of regional agricultural production is organic by 2030. This work builds on the new visionary Paris Food Strategy, developed in cooperation with a great number of local, regional and national stakeholders.

To further enhance and accelerate city action, the Network seeks to provide more direct support to participating city officials in the form of targeted technical assistance, training, regionally-focused activities, and communication materials to raise the urban food systems agenda at the international level as well as for local governments. A key opportunity will also be to strengthen city collaboration with other key actors in the food system, such as business and civil society organizations. Together these elements can help unlock the transformative potential of cities.

3.3 Food and Resilience

Lina Liakou, 100 Resilient Cities pioneered by the Rockefeller Foundation

Building on its rich legacy in urban development and resilience, the Rockefeller Foundation created 100 Resilient Cities in 2013 to catalyse a global urban resilience movement. 100 Resilient Cities (100RC) were charged with helping cities around the globe to better manage chronic stresses and acute shocks, so that people in those cities, especially the poor and vulnerable, are safer, healthier, and have increased livelihood options. 100RC operates in 6 continents and within 47 countries, partnering with cities of different sizes and characteristics, from big capitals, such as New York, Paris, Jakarta and Lagos to second-tier cities, such as Santa Fe, Thessaloniki and Belfast.

But what is urban resilience? Urban Resilience is the capacity of individuals, communities, institutions, businesses and systems within a city to survive, adapt and grow, no matter what kinds of chronic stresses, such as high unemployment or chronic food and water shortages and acute shocks they experience. To date, 84 Chief Resilience Officers (CROs) have been appointed by Mayors to lead their cities' cross-agency resilience effort, and 49 cities have published a holistic, actionable Resilience Strategy with the participation of over 2,800 community groups, representing the voices that will be required to build a resilient future.

Never have topics related to resilience been so relevant in the world. Human, infrastructural and financial assessments reveal the urgent need to act and deal with the increasing threat posed by these phenomena in the coming years. Resilient systems exhibit certain qualities, which enable them to withstand, respond and adapt more readily to such phenomena. However, in a complex, shifting, urban context, cities need to balance different competing priorities (including migration flow, unemployment, heat waves, ageing infrastructure) and identify the transformative actions with multiple benefits that have both a short and long-term impact. Within this context, the food system cannot be seen in a vacuum. We need to understand the nexus not only between energy, water and climate, but also between economy and society, and cities across the world are experimenting with new solutions to create new, cross-sector partnerships.

In Quito, for example, "The Participative Urban Agriculture Project" (AGRUPAR) fosters self-production of food by making use of empty public and private lots as a strategy to reduce food insecurity. In Melbourne, in the absence of accessible public spaces, residents are creating family-friendly community market gardens and activity centres on abandoned bowling grounds. Da Nang is piloting a new distribution model for healthy organic products, which will also provide jobs and improve livelihoods for people affected by urbanisation. Los Angeles wants to assess the stresses that impact citizens' food choices when access to food may be severely limited due to disruptions in

the supply chain, refrigeration, or a steady paycheck. Whether these are small- or large-scale initiatives, food is a critical component of a city's identity and development, and in addressing multiple city challenges and contributing to its overall resilience. However, a pivotal factor for global success is to measure their impact, create feedback loops and learn from each other. The 100RC along with other international networks and organisations are committed to supporting cities along this journey.

3.4 RUAF: Rural urban linkages

René van Veenhuizen, Resource Centres on Urban Agriculture and Food Security (RUAF) Foundation

The RUAF Global Partnership on Sustainable Urban Agriculture and Food Systems (RUAF) is celebrating the 20th anniversary of its creation as a network for innovative solutions to food systems and policies in towns and cities. Since 1999, RUAF has been hosted by the Dutch-based RUAF Foundation and is managed by an international RUAF Secretariat.
RUAF consists of founding partners, key NGOs and research organisations, and cities that are advanced in work on UPA and CRFS acting not only as examples and inspiration, but also providing coaching support to other cities. Together, they represent an additional dense network of partnerships in the global North and South, which continues to grow and intensify its networking. RUAF has so far engaged with over 100 local and international partner organisations and worked in 50 cities in over 40 different countries. RUAF has supported local and sub-national governments and other stakeholders with training, technical assistance, action-research and policy advice, and worked with local, bilateral and international organisations and networks, including EU, FAO, UN-HABITAT, UNEP and the World Bank. All materials are disseminated online and via partner publications and international meetings. RUAF is currently involved in various networks, including the ICLEI-RUAF CITYFOOD network, CGIAR-WLE, the Milan Urban Food Policy Pact, the FAO Food for Cities network, the UN Habitat Rural-Urban Linkages network, the WASH Alliance, etc.

Responding to global agendas (localisation of Sustainable Development Goals – especially SDG 11 and SDG 2 - and implementation of the New Urban Agenda), RUAF seeks to contribute to the development of sustainable cities and to food security in an increasingly urbanised world, by facilitating the integration of urban agriculture and city-region food systems assessments and measures in the policies and action programmes of local, regional and national governments, civic society organisations, NGOs, CBOs, research centres and private enterprises. It is also actively involved with urban producers and other relevant stakeholders (raising awareness, generating and disseminating knowledge, developing skills, policy design, and action planning).

RUAF works with city and municipal governments that are adapting and changing their policies. These changes are fast and ongoing as national and global institutions, as well as the cities themselves, realise that food can help to achieve multiple goals, and act on the need to strategise improvements to make urban food systems work better. RUAF works on further developing CRFS tools and indicators. It supports and promotes exchanges of knowledge between cities and towns on specific issues of sustainable urban food systems, guided by three goals:

1: Promoting localised systems of production for more inclusive food systems;
2: Strengthening the resilience of urban food systems;
3: Strengthening the role of cities in food policy governance.

RUAF partners develop and collaborate in various projects (with each other and with other partners and cities). They regularly share lessons learned, and draw on this experience in their work to share it with associated cities and municipalities and their networks, through mutual learning and building skills.

In addition, RUAF acts as facilitator with ICLEI, the CITYFOOD Network. This network of cities aims to accelerate local and regional government action on sustainable, resilient, city-region food systems, by combining networking with training, policy guidance and providing technical expertise to its participants. CITYFOOD facilitates cooperation between cities worldwide and between local governments and civil society. It is open to local and regional governments, whether they are engaging with the issue for the first time or working to implement the Milan Urban Food Policy Pact and stand at the frontier of work on innovative food systems. RUAF provides support and TA to these cities, bringing expertise and knowledge and further developing the RUAF network. Activities undertaken by ICLEI and RUAF include, amongst others: Training, Technical Assistance, Policy advice, development and dissemination of Fact Sheets, Guidelines and Tools, a City hub, inter-city exchanges and learning, Awareness raising and Lobbying. CITYFOOD is active in both the Global North and South and aims to build a strong South-South-North exchange platform for learning between cities.

3.5 Let's Food Cities: City-to-City Cooperation to Speed up Action and Spark Innovation

Anna Faucher, Louison Lançon, Let's Food Cities
Thierry Giordano, Food and Agriculture Organization of the United Nations (FAO)

Local authorities are increasingly seen as key players in the sustainable development agenda. The role they have played in climate change discussions has shown their ability to influence international debates due to their willingness and ability to take concrete action on the ground, far beyond what national governments are ready to commit. The role of international networks of local governments has been critical, especially because they foster city-to-city exchanges of experience which have led many more cities to act. There is no doubt that city-to-city cooperation can play a critical role in supporting the transition of food systems towards sustainability. The Milan Urban Food Policy Pact annual Award Program offers a monetary prize to the best practice of the year allowing the transfer of experience from the winning city to another city in the network interested in adapting this practice to its local context.

Similarly, in partnership with the MUFPP secretariat and global networks of local governments (C40, UCLG, ICLEI), FAO is promoting a city-to-city mechanism aimed at raising awareness and building capacities on the role of local authorities in changing food systems; at fostering dialogue and sharing experience; and at sparking innovation in developing countries. A strong focus is on South-South and triangular cooperation, but without neglecting often valuable North-South and South-North exchanges.

The demand of cities, especially in developing countries, for experience sharing is real as many elected representatives and city official lack knowledge on what they actually can do. More initiatives are therefore needed stemming from countries where decentralized cooperation is strongly anchored in local authorities' practices, like France, Germany, Canada, Italy, or Spain. However, decentralized cooperation on food security and nutrition is still very recent and hardly considered by many cities, while a growing level of experience could be shared.

In France, the Let's Food Cities, a non-profit organization, is stepping in to facilitate decentralized cooperation on food between 7 of the 8 French cities and metropolises that have signed the MUFPP since 2015 (Bordeaux, Grenoble, Lyon, Marseille, Montpellier, Nantes, Rennes and Paris). The organization is proposing to help these 7 cities make their commitment operational and become ambassadors of their sustainable practices on food to other partner cities. The Let's Food Cities pilot project, built over 3 years, aims to support and facilitate the exchanges and dissemination of good practices around sustainable food issues through decentralized cooperation mechanisms. By integrating a new food component into already existing cooperation relationships (Bordeaux / Guanajuato (Mexico), Grenoble /

Sfax (Tunisia), Lyon / Ho Chi Minh City (Vietnam), Marseille / Valparaiso (Chile), Montpellier / Fez (Morocco), Nantes / Durban (South Africa) and Paris / Tehran (Iran), the project aims to sensitize policy makers to the necessary food transition at local, national and international levels. The Let's Food Cities project helps to anchor food as a relevant prism for the resilient development of the city region, by facilitating French municipalities' internal cooperation (two services involved: international relations and food policy) and their cooperation with local universities (food system assessment partners).

Decentralized cooperation on food security and nutrition still receives little attention from national and international funding bodies. However, the French Development Agency is starting to show interest in urban food related issues and, in December 2017, the French Ministry of European and Foreign Affairs published the first call for decentralized cooperation projects for French cities wishing to initiate international cooperation on food.

To date, the resources allocated to urban food issues and decentralized cooperation, at all levels, remain largely insufficient in view of the actual demand of cities for exchanges and learning. Innovative initiatives as previously described, stemming from local, national or international actors, public or private, are paving the way for cities to get inspired and accelerate the urgently needed transition towards sustainable food systems.

3.6 Ellen MacArthur Foundation: Circular Economy

Rob Opsomer, Clementine Schouteden, Ellen MacArthur Foundation

The Ellen MacArthur Foundation's Systemic Initiatives aim to accelerate the global transition towards a new economic system by applying circular economy principles to key material streams. We do so by working with businesses, governments, philanthropists, innovators, and NGOs, sparking unprecedented levels of cross-sectoral collaboration and innovation. It is only by understanding a system in all its complexity that we can design catalytic interventions and start shifting it in a positive direction.

The Cities and the Circular Economy for Food initiative aims to fundamentally rethink food in cities by building a system on the circular economy principles. Cities are an underappreciated entry point for addressing food system challenges. This report lays out a vision for food in cities that builds natural, economic, and environmental capital. It forms the basis for a multi-year systemic initiative where municipalities, retailers, food brands, and innovators can build on ongoing efforts and work together to make an important contribution towards a food system in cities that is no longer wasteful and polluting but regenerative and restorative.

So far, cities participating in the initiative's global consortium have been invited to periodic webinars held every 6-8 weeks and three workshops held in Europe, the US, and Brazil. Webinars and workshops provide consortium members with updates from the initiative, invite them to provide feedback and insights, and offer them an opportunity to connect with and learn from a diverse set of stakeholders.

The Foundation is conducting in-depth analyses of four selected Focus Cities to assess the transition to a circular economy for food in cities and its potential benefits. Focus City analyses investigate the potential for a city to be fed with food grown regeneratively and locally (where relevant), as well as the opportunity to prevent avoidable food waste – turning remaining organics into valuable products. The resulting insights will provide valuable contributions to the report, which is planned to launch in January 2019, marking the end of the analysis phase of the C&CEFF initiative. As the initiative moves into the mobilisation phase, the model to engage cities and other key food system influencers will shift to focus on practical ways to turn the vision for a circular economy for food into action.

The initiative has convened more than 100 businesses and organisations from across the food value chain, along with several municipalities, to form a global consortium. These engagement opportunities provide a platform for sharing updates from the project, gaining feedback and insights from consortium members, and showcasing examples of solutions for a circular economy for food in action.

3.7 Circular Economy and the Food System: a Perspective from the Intesa Sanpaolo Innovation Center

Massimiano Tellini, Anna Monticelli, Giuseppe Capetta, Luigi Riccardo, Intesa Sanpaolo Innovation Center

Intesa Sanpaolo Innovation Center has long been involved in initiatives for the food sector with institutions, corporates and start-ups. In 2015, we joined the Ellen MacArthur Foundation as the only Financial Services Global Partner; moreover, we are a Core Partner of its "Cities and the Circular Economy for Food" systemic initiative, launched in 2018 at the World Economic Forum. Since 2016, we have supported Seeds&Chips, the leading Food Innovation Summit in Italy and one of the most relevant in the world, as a Gold Partner. Furthermore, we are on the verge of entering into an agreement with the Future Food Institute, an Italian-based non-profit organisation with global horizons that aims to build a more equitable world by enlightening a world-class breed of innovators, boosting entrepreneurial potential and improving agri-food expertise and tradition. Our purpose is to empower innovation as a force for good, connecting stakeholders to encourage, share and implement new approaches for regenerative systems, thus accelerating the transition to the Circular Economy in the Food sector as well.

The transition is taking place in Italy as well, with Italian regions being global leaders in organic waste collection and recovery. Composting plants have usually been entrusted with the transformation of organic waste into organic fertilisers for agriculture and gardening. Over the last decade, integrated anaerobic digestion has allowed companies such as Montello to recover both materials and energy, thus producing biogas in addition to compost. All of this, along with the upgrading from biogas to biomethane, plays a key role in the Circular Economy strategy which is being embraced both by the European Union and Italian legislators.

The City of Milan is one of the best examples of organic waste management, producing biofuel to fuel its garbage trucks, however, despite regional differences, the sorted collection of organic waste is widespread across the whole country.
We believe that composting and energy should be the first step towards making greater use of organic waste to produce, for example, nutrients and renewable fuels. As a matter of fact, Italian start-ups are proving to be particularly successful in the so-called high value cascading process. Intesa Sanpaolo Innovation Center has identified some of the most promising ones and is actively supporting them to scale-up their businesses.

A sample list of food waste management start-ups in the Italian landscape is presented below.

- Bio-On, which produces 100% biodegradable and compostable plastic, primarily using agricultural processing waste.
- BioInnoTec, a biorefinery in Puglia which reuses milk whey waste, converting it into high

value products, including microbic biomass and roteins.

- CartaCrusca Favini, which makes paper using organic production waste as a raw material.
- DueDiLatte, which makes organic fabric from milk waste, thus creating fashionable clothes either entirely from milk or from a mixture of milk and recycled plant materials.
- Ecodyger, which allows the in-house processing of organic waste into compost, without any chemical additive.
- Orange Fiber, the world's first and only brand to produce a patented material from citrus juice by-products, to create fabrics made of a silk-like cellulose yarn. The resulting lightweight textile has a soft and silky feel and can be opaque or shiny as required for production.
- Pigmento produces a 100% natural dye from agricultural and alimentary waste, which can be used in multiple sectors (Fashion, Construction, Cosmetics, etc.).
- RecuperAle, similarly to the London-based ToastAle,
  reuses surplus food to produce beer and is strongly committed to social innovation.
- Rice House turns waste from the local rice supply
  chain into valuable materials, including paint, for the Built Environment industry.
- Vegea produces an innovative material obtained through specific treatments of the fibres and oils contained in grape marc (skins, stalks and seeds that remain after pressing the grapes). It can be used in the fashion and design industries (e.g. leather goods) as a green and cruelty-free alternative to animal-derived and synthetic materials.

Despite this focus on waste management, circular models could benefit the food sector in many ways. Companies like Hexagro and Robonica, for instance, develop solutions to enable indoor farming, also adopting hydroponic and aeroponic technologies, which could tackle the increasing demand for food supplies. Some companies, like Mangrove Still, are active in soil regeneration, while others, such as MyFoody, are focused on the redistribution of food surplus. Other themes are being investigated, such as the role of local food supply and the preservation of biodiversity. In general, we believe that the circular economy will have a significant impact on food systems in the coming years. We also trust that, thanks to their readiness and cultural values, Italian institutions and companies will be likely to have a central role in this transition.

3.8 Forum for the Future: Food and Cities

Lesley Mitchell, Sustainable Nutrition, Forum for the Future

One of the biggest challenges faced by the UN Sustainable Development Goals is hunger – and ensuring future food systems enable responsible production and consumption to deliver healthy diets and livelihoods to all. How do cities engage with this challenge and what responses can deliver solutions that enable their burgeoning urban populations to thrive?

Cities themselves are dynamic, and the many systems that underpin them are transforming rapidly. Yet these challenges are often managed in isolation, whether that be water, energy, food, health, waste or transport infrastructure. Forum for the Future's Future Cities Dialogue worked with Innovate UK to examine how key aspects of urban systems could be integrated, aiming to deliver citizen-centred approaches that reduced waste, enabled the circular economy and encouraged innovation and commercial opportunity.

The dialogue brought together a range of stakeholders, including food experts with diverse visions of potential futures. It enabled diagnosis of key components influencing cities' food systems and prioritized the drivers that would have the greatest future impact, developing scenarios of the diverse urban food outcomes to which they could lead.

The project identified major challenges in the food system, from the control and centralization of food and nutrition access via large scale supermarkets, to the rise of food deserts in poor areas with limited access to fresh food and the move toward 'on the go' fast food for the time poor. One of the most robust effects of growing incomes is the rise in consumption of calories, protein and fat, often beyond nutritional need. Nowhere is the interlinkage more clear between cities' systems than food and health. Disrupting the shift from poor- to over-nutrition through access to quality food, through community food hubs for example, builds a city's ability to tackle the rise in diet-related non-communicable disease.

The dialogues revealed the disconnection between growing urban populations and increasingly remote rural food production, while highlighting a counterpoint demand for localization, and citizens' wish to operate at a scale they understand. It highlighted the reliance of urban food systems on transport infrastructure and implications of urban food waste for water quality and energy production. The visions of future food production were often dichotomous – from increasing 'naturalness' of this often distant food production through organics, through to innovation of technology-led, high intensity vertical hydroponic farms within cities. Such developments are already being realized, from the startup Growing Underground in South London, using abandoned air raid shelters to grow vegetables - at full capacity, able to produce

80,000 kg per year. GrowBristol, an urban farming venture, grows plants alongside fish, using fish waste as natural fertilizer, interlinking the farming systems and enabling circular utilization of nutrients.

Forum for the Future's flagship project, The Protein Challenge 2040 has addressed one of the biggest food sector conundrums, building a collaboration of major protein system actors to work together to find solutions to feed a growing global population with sufficient protein, without destroying the planet. The move toward increasing consumption of plant-based protein, propelled by an increasing willingness across the food sector to innovate, is reframing the role of animal-source foods in urban diets, especially for the millennial generation. The rise in food companies promoting 'novel' food products, developing lab-grown meats and plant-based meat replacement products, points to a diverse urban protein future based on functionality and nutrition rather than traditional 'naturalness'. These novel food innovations have the potential to influence health outcomes as well as the environmental profile of food production, but this is contingent on widespread consumer acceptance. As the Protein Challenge engages new regions such as Asia, a new culturally and regionally relevant dialogue will develop reflecting the priorities of the region's new emerging cities.

Across both projects, lessons are clear. The system, whether it be the food system, or the city itself, is more than the sum of its parts. Only by working together across all those who influence the city as a system can we maximize the potential to build a sustainable future.

NOTES

[47] For more information please visit: www.forumforthefuture.org http://growbristol.co.uk/ http://growing-underground.com/ https://www.gov.uk/government/publications/future-cities-dialogue-investigating-uk-urban-system-integration https://www.forumforthefuture.org/protein-challenge

3.9 Bloomberg Associates: Cities' Experiences

Adam Freed, Jacob Koch, Bloomberg Associates

Across the United States one in seven people regularly rely on non-profit food banks for food[48], more than 7,300 community supported agriculture (CSA) programs link consumers directly to farmers[49], and over 320 Food Policy Councils bring stakeholders together to shape their food systems[50]. Traditionally, cities have had a limited focus on food-related issues. As a result, non-governmental actors stepped up to address challenges in urban food systems.

In recent years, however, municipal governments have increasingly recognized the role that food plays in their cities' economies, health, waste management, resilience, greenhouse gases (GHG) emissions, and overall sustainability. In response, they are creating food policies, programs, and even offices. This is particularly relevant as cities are on the frontlines of natural disasters that stress food systems and as cities shift from production to consumption-based GHG inventories that highlight the importance of food and waste on emissions. In looking at the food programs emerging in cities, we see four characteristics that help define the most successful efforts.

First, cities need to be explicit about what problems they are trying to address through food. Food touches every aspect of urban life, but no program can effectively solve everything. Programs must be targeted to achieve the specific outcomes relevant to localities. For example, Paris recently announced an initiative to encourage "meatless Mondays" at restaurants and city-operated cafeterias. This action aims to help Paris achieve its goal of reducing consumption-based GHG emissions 80% by 2050. Food was included in this climate-focused program because meat consumption is one of the biggest drivers of the food-related GHG emissions, which represent 18% of the city's consumption-based GHG emissions.

Second, cities need to take a data-driven approach to diagnose problems and develop solutions. In Detroit, advocates were pushing the City to eliminate food deserts to help combat obesity. An analysis by the City's Department of Health, however, found that most Detroiters lived within close proximity to a source of healthy food. The bigger challenge was influencing residents' purchasing habits to buy fresh fruit and vegetables rather than processed foods and working with grocery stores to better promote healthy food options. By following the data, Detroit was able to develop programs that targeted the root cause of the challenge they were seeking to address.

Third, because food systems are not organized along traditional governmental structures, it is critical to break down silos to achieve change. In 2017, Detroit created an Office of Sustainability to coordinate and lead the City's sustainability efforts. Reflecting the

cross-cutting nature of food, the Office convened a working group of ten City agencies to develop food goals and programs, including the Health, Water and Sewerage, and Planning departments, and the municipal Land Bank. The working group identified an opportunity for the departments of Health, Economic Development, and Parks to change the procurement of food for free summer meals at City recreation centres. This led to new criteria that preference local suppliers of healthy food to align with the City's goals of supporting local businesses, growing the food sector, and reducing childhood obesity.

Finally, cities need to be creative and flexible. A scan of a dozen leading urban agriculture projects uncovered a multitude of ways municipalities can support these projects. In addition to providing land or funding, cities updated building and zoning codes to allow activities and structures not allowed under existing rules, streamlined permitting, subsidized water rates, and provided insurance for volunteers to work on a non-profit farm. This willingness to think outside of the box to meet the unique needs of food-related projects enabled action to occur.

Approximately two-thirds of agricultural outputs are consumed in cities. Increasingly, local governments are realizing that they can play a more meaningful role in their food systems than just being passive consumers. Municipal governments should continue to push themselves to find ways to shape their food systems to improve the lives of their citizens and to create more sustainable cities.

Against this context, Bloomberg Associates is an international consulting service founded by Michael R. Bloomberg as a philanthropic venture. Our mission is to help city governments improve the quality of life of their citizens. Directed by a team of globally recognized experts and industry leaders, the consultancy works to improve urban environments by collaborating with cities to develop best practices, build consensus and foster key relationships. Through its guidance and mentorship, Bloomberg Associates delivers actionable insights and plans across multiple disciplines. Additionally, the team fosters public-private partnerships to help each city build resources and implement programs that turn dynamic vision into reality.

NOTES

[48] Feeding America, *Hunger in American 2014 Study*, Retrieved from http://www.feedingamerica.org/research/hunger-in-america/key-findings.html

[49] USDA National Agricultural Statistics Service, Retrieved from https://quickstats.nass.usda.gov/results/298E87F7-4157-341C-8322-C4991DCA5D34#4FDAD2B5-25CF-3F99-9FFF-784A90DF53A0

[50] Johns Hopkins Center for a Livable Future, *2016 Food Policy Council Report*, retrieved from http://www.foodpolicynetworks.org/food-policy-resources/?resource=933

3.10 The Chicago Council on Global Affairs: On Food Security and Cities

Roger Thurow, Marcus Glassman, The Chicago Council on Global Affairs

The Chicago Council on Global Affairs is an independent, nonpartisan think tank that provides insight—and influences the public discourse—on critical global issues. The Council convenes leading global voices, conducts independent research, and engages the public to explore ideas that will shape our global future. The Council is committed to bringing clarity and offering solutions to issues that transcend borders and transform how people, business, and governments engage the world. Founded in 1922 in Chicago, the Council carries out its mission by bringing together leaders in business, government, education, and the arts in international forums and task forces that drive critical dialogue and offer policy-relevant analysis and solutions on a range of global issues, including the rise and influence of cities and the importance of advancing global food security as a critical driver of development globally. As a membership organization, the Council operates as a platform from which the best ideas can be brought to the fore, and new policies and research are disseminated by publishing independent research and analysis.

For the Council's Global Food and Agriculture Program, research focuses on the importance of food and nutrition security, and ways governments, civil society, and the private sector can act to support innovation and progress on global food and nutrition security. Convened annually, the Council's Global Food Security Symposium in Washington, DC, brings global stakeholders together to discuss the most pressing challenges—and solutions—concerning global food security, including how to harness the power of the youth bulge in sub-Saharan Africa to drive economic and agricultural transformation; how water security must be addressed to achieve food security; and, critically, what cities can do to drive food and nutrition security for themselves and globally.

One solution shared on the Council's platform, and explored extensively through the Council's research—including the reports Bringing Agriculture to the Table and Growing Food for Growing Cities—is that cities, especially the emerging megacities in low- and middle-income countries, can drive considerable progress towards a shared, prosperous, and food secure future, bringing us closer to achieving the SDGs. Through collaboration, cities can provide urban dwellers access to nutritious, sustainable foods, and give regional farmers access to stable and growing markets.

Improved regional trade capacities builds efficient and sustainable food systems that cross national borders, and enable smallholder farmers to prosper, while nourishing the growing urban populations. Cities can push to strengthen their and their nations' research institutions to help build and design more sustainable, prosperous farms, which in turn support broader, more robust food systems for low- and middle-income countries. These cities can help enable and leverage private-sector investment that includes

small-scale farmers and rural enterprises to foster inclusive, regional economic transformation through the build-up of the regional food system. To realize this, cities should invest in the next generation of scientists, entrepreneurs, and leaders needed to ensure that growing urban demands for food are met. Achieving such goals requires cities, rural communities, and national governments to work together—and work towards the shared goals and solutions, such as those brought to the fore by the Chicago Council for policy makers, civil society, and the private sector to discuss, debate, and take on.

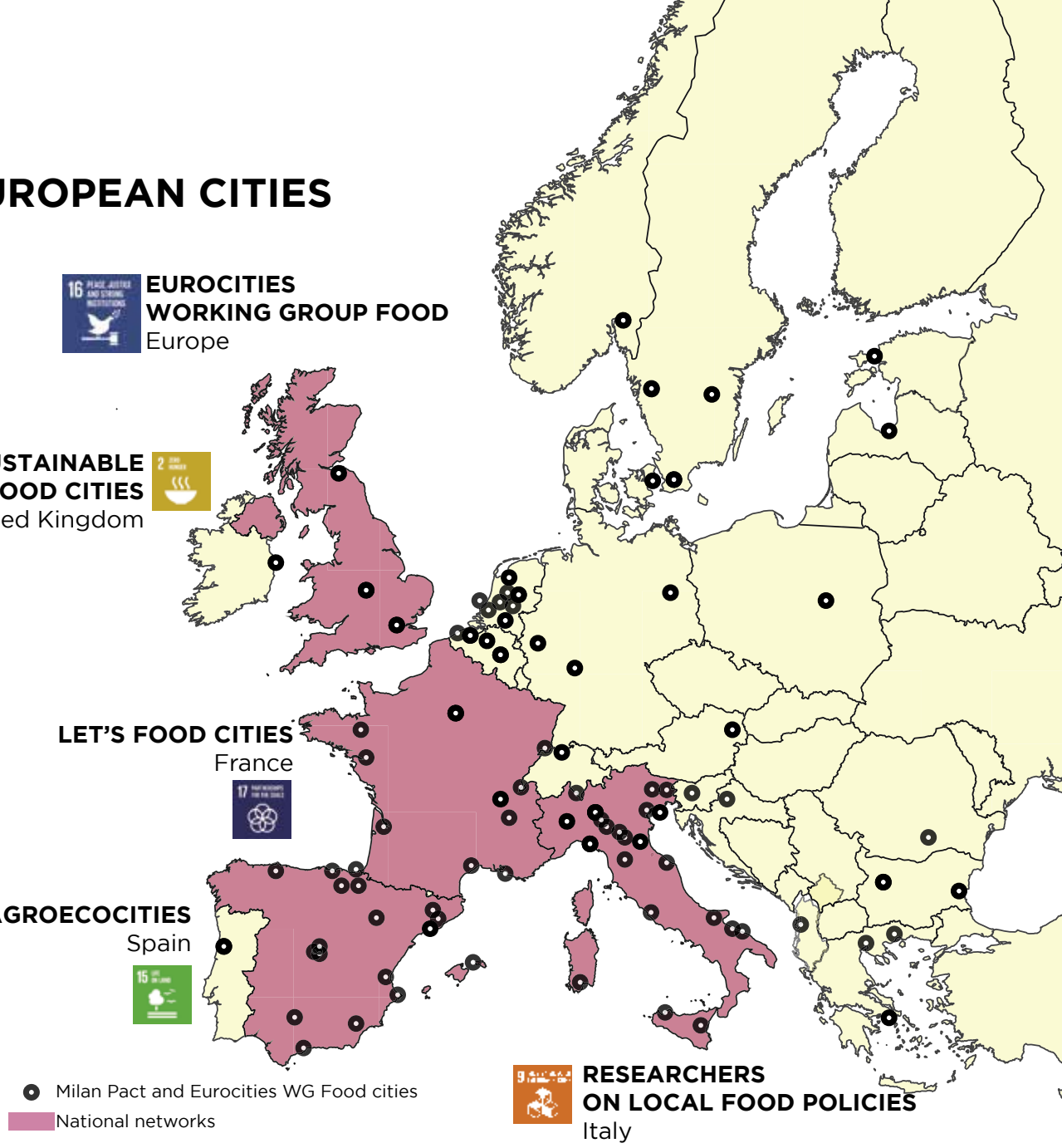
EUROPEAN CITIES

EUROCITIES WORKING GROUP FOOD
Europe

SUSTAINABLE FOOD CITIES
United Kingdom

LET'S FOOD CITIES
France

AGROECOCITIES
Spain



RESEARCHERS ON LOCAL FOOD POLICIES
Italy

EUROPEAN POLICIES

AGRICULTURE
New Common Agricoltural Policies (DG AGRI)

FOOD WASTE
Circular Economy Package and EU Platform Food Losses and Waste (DG SANTE)

FOOD SYSTEM
Research and innovation policy Food2030 (DG RTD)

4. EUROPE

This section focuses on the European landscape, with a detailed look at some of the European Commission's policies and the actions taken in a number of EU cities

4.1 FOOD 2030: Food Research Policy

Valentina Amorese, Fondazione Cariplo
Chiara Pirovano, Milan Food Policy Office

The European Commission has responded to recent international policy developments, including the SDGs and COP21 commitments, with a timely EU research and innovation policy: FOOD 2030. The strategy was launched after the 2015 Milan World Expo by the Commissioner for Research and Innovation, Carlos Moedas, and intends to explore what is needed to transform and future-proof food systems to make them sustainable, resilient, competitive, diverse, responsible and efficient in their provision of accessible, healthy and sustainable food and diets for all. Furthermore, FOOD 2030 investigates how research and innovation systems can be scaled up to contribute to the Food and Nutrition Security priorities more effectively.

In order to strengthen the strategy, the EU Commission has worked to create continuous momentum around FOOD 2030 in many ways: informing the next Horizon Europe framework with food systems issues, holding annual high-level FOOD 2030 conferences and focusing on activities undertaken by cities to implement the strategy. In defining the next research policy framework on food for the next Horizon Europe, the European Commission has taken a responsible approach according to RRI principles. This sentence may initially seem tautological but it becomes clearer when you deconstruct the meaning of responsible in light of the RRI approach. As defined by the EU Commission, responsibility requires openness, inclusiveness and transparency, as well as sensitivity to change and reflexion. Following the process that was carried out to shape the next Horizon Europe framework, we experienced precisely this openness and inclusion, diversity and sensitivity. In practice, it meant consulting with different stakeholders at the very beginning of the framework definition process, listening to different views and voices and including them in the process of identifying the EU's next research policy framework to deal with the complexity that surrounds Nutrition, Circularity, Innovation and Climate, the four pillars of FOOD 2030.

The EU Commission has allocated an investment of 10 billion euros specifically to Horizon Europe on the topic of food. FOOD 2030 was created to make the best decision about how to use these funds. To take further steps towards implementing FOOD 2030, DG RTD also established a group of experts to appraise the current research landscape relevant to food systems and formulate missions to direct future research and innovation activities in Europe.

High-level FOOD 2030 conferences act as milestones in the debate on the food system challenges in Europe and the event held under the presidency of Bulgaria, in Plovdiv, in June 2018, was attended by city representatives for the first time. For the first time at a

high-level EU conference, cities were described as a new kind of actor and a strong European stakeholder, integrated institutionally with the Commission and Member States. This innovative role emerged from the conclusions of the expert groups and the Plovdiv FOOD 2030 Declaration and call for action.

Furthermore, on the same occasion, the city of Milan organised a side event on the topic of "Sustainable Food Systems for Cities", emphasizing to the European Commission the need for a common approach to more sustainable and resilient food systems that takes the perspective of cities into account. The following lessons emerged when views were shared at the side event:

1. In order to be effective and have an impact, food policy practices require the involvement of local authorities.
2. Food policy practices are still perceived as a contingent experience and are not yet associated with an easily replicable business model.
3. Food policy practices are engaging different stakeholders, however, given the lack of attention to citizen science, there is a possibility that the various stakeholders might not be valued in the same way;
4. Cities have comprehensive knowledge of food related issues that can be connected to other European drivers (national governments, EU policies, urban networks) to increase their impact.

4.2 The EU Platform on Food Losses and Food Waste

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Andrea Magarini, Milan Food Policy

According to the most recent estimates on food losses and waste (FLW) in Europe, as much as 70% of FLW happens at consumption and retail level, while the remaining 30% occurs during the initial stages of the food supply chain (FSC), i.e. between field and processing[51]. For this reason, scientific research has so far been focused on consumer food waste, both in and out of the home[52,53,54,55]. It is important to note, however, that along with an academic commitment to understand this multi-faceted and complex phenomenon, there is a strong need for policy makers and practitioners to get involved in order to establish systemic initiatives to tackle the phenomenon and achieve the UN SDG 12.3, which aims to halve per capita food waste at retail and consumer level by 2030, and to reduce food losses along the food production and supply chains[56,57,58,59], Europe is certainly at a good stage in addressing the FLW issue: the EU and Member States are committed in achieving the SDG 12.3, and in order to do so they included prevention as a part of the Circular Economy (CE) Package[60]. Over the last 150 years, the world economy has been built on the traditional linear extract-produce-use-dump material and energy flow which has recently been shown to be unsustainable from an economic, societal and environmental point of view[61]. The CE concept has been recently encouraged by the EU and several other countries, including China, Japan and Canada, and it ultimately fosters economic growth with an alternative cyclical flow model which does not undermine our planet's sustainability[62,63]. According to Korhonen et al. (2018), the CE approach "emphasises product, component and material reuse, remanufacturing, refurbishment, repair, cascading and upgrading as well as solar, wind, biomass and waste-derived energy utilisation throughout the product value chain and cradle-to-cradle life cycle" (p.37). As regards the sustainability of our food systems, CE embraces all the activities aimed at reducing, reusing and recycling materials along the FSC[64]. Therefore, CE highlights the importance of minimizing waste (including FLW) by converting it into a new resource that can be used as a new industrial input or as a raw material for other purposes, like energy or nutrient recovery. It is worth noting that the EU is committed to encouraging waste reduction and implementing recovery initiatives according to the waste hierarchy framework and CE concept[65]. To sum up, the correct and sustainable implementation of waste management practices, established in line with the waste hierarchy and CE approach, can help several entities (such as cities, communities and companies) to new lease of life and to use it as a secondary raw material and energy[66].

Moreover, in order to support the achievement of SDG 12.3 and boost the action of all the players involved, the CE Package called on the EU Commission to launch a platform on FLW prevention: the EU Platform on Food Losses and Food Waste. Established in 2016, the platform brings together EU institutions, experts and the relevant

stakeholders with the main aim of defining measures to prevent FLW; highlighting best practices; and evaluating the state of the art of the phenomenon and its progress over time.

Since it has been acknowledged that sustainable FLW management could play an important role in the transition towards more sustainable societies and communities[67], it is urgent to involve cities and promote urban food policies in the fight against FLW. The Milan Urban Food Policy Pact (MUFPP) network, which brings together about 180 mayors (around 45% of them in Europe), was set up in 2015 and commits cities to developing sustainable food systems, ensuring access for all to healthy food, protect biodiversity and address food waste. In order to set up a European framework to consolidate the path undertaken, a working group on food-related issues has been created among the European cities (EUROCITIES[68]) that signed the MUFPP. This Working Group Food is led by the city of Milan with the main aim of becoming a "creative hub" for sharing information, ideas, best practices and experimenting innovative solutions related to urban food. It therefore promotes the role of cities as active actors for a more fair and sustainable food system.

The Eurocities Working Group Food organised a meeting in Amsterdam in March 2018 focused on Food Losses and Waste practices at urban level. The meeting also keeps in close contact with the EU institutions on the latest developments in EU action for the circular economy. The main aim of the Working Group is to provide cross-cutting advocacy to the European Commission on topics related with food. One of the practical initiatives taken is the first Food Waste Challenge organised in Amsterdam by the Food Surplus Entrepreneurs (FSE), network which brought together 35 participants. The European Food Waste Innovation Network (FoodWIN) then coached 2 of the working groups interested in pursuing the initiative, resulting in an educational program on food waste and in a social business to make desserts from bread waste.

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[51] FUSIONS. 2016. *Reducing food waste through social innovation*. Retrieved: http://www.eu-fusions.org/phocadownload/Publications/Estimates%20of%20European%20food%20waste%20levels.pdf

[52] Principato L. (2018), *Food Waste at the Consumer Level. A comprehensive Literature Review*, Springer International Publishing, Cham (ZG) Switzerland.
[53] Van Geffen, L.E.J., Van Herpen van Trijp, J.C.M. (2016). *Causes and determinants of consumer food waste: A theoretical framework*. Refresh report.
[54] Secondi, L., Principato, L., Laureti, T. 2015. Household food waste behaviour in EU-27 countries: A multilevel analysis, *Food Policy* 56: 25-40.
[55] Principato L., Secondi L., Pratesi C.A. (2015). Reducing food waste: an investigation on the behaviour of Italian Youths, *British Food Journal*, Vol. 117 Iss: 2, pp.731 – 748.
[56] Quested, T. E., Marsh, E., Stunell, D., & Parry, A. D. (2013). Spaghetti soup: The complex world of food waste behaviours. *Resources, Conservation and Recycling*, 79, 43-51.
[57] Principato L. (2018), *Food Waste at the Consumer Level. A comprehensive Literature Review*, Springer International Publishing, Cham (ZG) Switzerland.
[58] United Nations General Assembly. (2015). *Transforming our world: The 2030 Agenda for Sustainable Development*. New York, United States. DOI: 10.1007/s13398-014-0173-7.2
[59] Principato L., Pratesi C.A., Secondi L. (2018), Towards Zero Waste: an Exploratory Study on Restaurant managers, *International Journal of Hospitality Management*, n. 74, pp. 130-137.
[60] European Commission. (2015).Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions Closing the Loop - an EU Action Plan for the Circular Economy. Brussels, Belgium.
[61] Korhonen J., Honkasalo A., Seppälä J. (2018). Circular Economy: The Concept and its Limitations, *Ecological Economics* 143, 37–46.
[62] CIRAIG (International Reference Centre for the Life Cycle of Products, Processes and Services). (2015). *Circular Economy: A Critical Literature Review of Concepts.* Polytechnique Montréal, Canada.
[63] Ellen MacArthur Foundation (EMAF), SUN, McKinsey & Co. (2015). *Growth Within: A Circular Economy Vision for a Competitive Europe.*
[64] Murray A., Skene K., Haynes K. (2015). The Circular Economy: An Interdisciplinary Exploration of the Concept and Application in a Global Context. *Journal of Business Ethics.*
[65] Mihai, F.-C., Ingrao, C. (2018). Assessment of biowaste losses through unsound waste management practices in rural areas and the role of home composting, *J. Clean. Prod.* 172, 1631e1638.
[66] Jimenez-Rivero, A., García-Navarro, J. (2017). Best practices for the management of end-of-life gypsum in a circular economy. J. Clean. Prod. 167, 1335e1344.

[67] Kim, M.H., Song, H.B., Song, Y., Jeong, I.T., Kim, J.W. (2013). Evaluation of food waste disposal options in terms of global warming and energy recovery: Korea, Inter. J. Energy Environ. Eng. 4, 1e12.

[68] EUROCITIES is an established partner in the Urban Agenda for the EU, an experimental initiative where cities, Member States and the European Commission work together in partnerships around specific urban challenges for better knowledge, regulation and funding. We support the closer involvement of cities in EU in policy making, building on the potential of urban innovation.

4.3 The Future of the Common Agricultural Policy: Urban and Peri-Urban Agriculture

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Elisa Porreca, Milan Food Policy Office

The United Nations estimates that 55% of the world's population currently live in urban areas. This trend is increasing, and it is estimated that by 2050 it will have grown to 68%, particularly due to the overall growth in the world's population.[69] As this trend intensifies, achieving sustainable development depends increasingly on devising transformative approaches to address urban growth. As cities grow, food demand is also heavily impacted (quantitatively and qualitatively) and it usually exceeds the capacity of the surrounding agricultural area, exacerbating the competition for land and water resources.

A key factor is the urban and peri-urban agricultural practices being developed globally, which can contribute to achieving SDG 11 "Sustainable Cities and Communities") by 2030[70,71], The term Urban Agriculture (UA) indicates "the growing, processing and distribution of food or livestock within and around urban centres with the goal of generating income", although the definitions vary.[72,73] The concept of peri-urban agriculture (PUA): agricultural practices within and around cities which compete for resources usable for other urban population purposes, should also been considered.[74,75] UA is not just a form of innovation able to involve the different actors of the food system but can also be seen as a way to improve its sustainability. Around Europe, different city governments have taken the lead with many innovative practices, including vertical, school, indoor, and rooftop farms, edible green walls, urban food policies, city markets with local producers' areas, educational programs, reducing food waste by applying circular economy strategies and many others. EURO-CITIES for instance, a network of over 185 major European cities founded in 1986 and a signatory to the Milan Urban Food Policy Pact (MUFPP) has recognised the importance that UA can play in promoting both innovation and the urban food production sustainability.

The International Panel of Experts on Sustainable Food Systems (iPES FOOD) recently published a report[77] which, by analysing five case studies, highlights the common elements that drive urban food policies. The Panel indicated the 'Common Food Policy' vision as a revolutionary tool to deliver sustainable food systems in Europe.

While at local level cities have already established polices and taken concrete action to make urban food systems healthier and more sustainable, a comprehensive European political framework has yet to be developed. The European Common Agricultural Policy (CAP) almost entirely neglected urban agriculture[78,79], as urban farms are usually too small to be eligible for Pillar I funding and cannot be defined as rural agriculture and are therefore ineligible for Pillar II funding. The Agriculture DG is clearly about rural development.

This is despite the fact that urban agriculture is highly multifunctional, a clear priority in the CAP, and could offer good practice to mainstream farming. This is highlighted also by a recent EU report[80] in which the Agricultural and Rural Development Commissioner recognised that none of the current CAP measures promote urban agriculture. Dynamic rural-urban linkages are also pivotal to move towards a rural transformation, as envisaged by the 2030 Agenda, by spurring economic diversification in the agricultural sector, creating opportunities for rural youth employment (the majority of EU farmers were older than 55 and only 6% were younger than 35 years in 2013)[81] and improving agribusiness development.

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[69] United Nations (2018). World Urbanization Prospects: The 2018 Revision. Available at: https://population.un.org/wup/Publications/Files/WUP2018-KeyFacts.pdf

[70] Mbow C., Neely C., Dobie P., (2015). "How can an integrated landscape approach contribute to the implementation of the Sustainable Development Goals (SDGs) and advance climate-smart objectives?". In: Minang P.A., Noordwijk van M., Freeman O.E., Mbow C., Leeuw de J., Catacutan D. (Eds.,), Climate-Smart Landscapes: Multifunctionality in Practice. First ed. World Agroforestry Centre, pp 103-116.

[71] Hernandez M., Manu R., (2018). SDG KNOWLEDGE HUB. Growing Greener Cities: Urban Agriculture and the Impact on SDG 11.

[72] Roggema R., (2016), Sustainable urban agriculture and food planning , Routledge, pp. 3.

[73] Mougeot L. J. A., (2000). Urban Agriculture: Definition, Presence, Potentials and Risks, and Policy Challenges. International Development Research Centre.

[74] Santo R., Palmer A., Kim B., (2016). Vacant lots to Vibrant Plots: A review of the benefits and limitations of urban agriculture, Johns Hopkins Center for a Livable Future.

[75] Opitz I., Berges R., Piorr A., Krikser T., (2016). Contributing to food security in urban areas: differences between urban agriculture and peri -urban agriculture in the Global North, Agriculture and Human Values, 33, pp.341-358

[76] Zasada I., (2011). Multifunctional peri-urban agriculture—A review of societal demands and the provision of goods and services by farming. Land Use Policy. 28, pp.639-648.

[77] IPES-Food, 2017. What makes urban food policy happen - IPES food. Available online: http://www.ipes-food.org/images/Reports/Cities_full.pdf

[78] Curry N., Reed M., Keech D., Maye D., Kirwan J., (2014). Urban agriculture and the policies of the European Union: the need for renewal. Spanish Journal of Rural Development, 5, pp.91-106.

[79] Lohrberg F, Pickard D., Arapis G., Branduini P., Duží B, Hernández-Jiménez V., Koleva G., Laviscio R., Scazzosi L., Petralli M., (2013). "Urban Agriculture Goes Brussels: Urban Agriculture as a Tool for the Europe 2020 Strategy". In: Lohrberg F., Licka L., Scazzosi L., Timpe A. (Eds.,), *Urban Agriculture Europe*. First ed. Jovis. pp 208-213.

[80] Eldowney J., (2017). Urban agriculture in Europe – Patterns, challenges and policies. European Parliamentary Research Service. Available online: http://www.europarl.europa.eu/RegData/etudes/IDAN/2017/614641/EPRS_IDA(2017)614641_EN.pdf

[81] EU Commission, (2015). EU farms and farmers in 2013: an update. Available online: https://ec.europa.eu/agriculture/sites/agriculture/files/rural-area-economics/briefs/pdf/009_en.pdf

4.4 FRANCE - Back to the Future: Territorial Food Systems in France

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Is history repeating itself? Thousand years ago, when the first human settlements evolved into cities, food security was the utmost priority of any local authorities. Well-organised networks of territories, trade route and market places were established to ensure a reliable food supply to a growing urban population. The many transformations of food systems have progressively led cities to overlook the importance of a reliable food supply, both in quantity and quality. Today, local authorities are rediscovering the importance of sustainable and resilient city region food systems.

However, food falls very rarely within the remits and mandate of local authorities, despite the fact that many policies (education, health, transport, etc.) and investment decisions (marketplaces, suburb construction, roads, etc.) are directly or indirectly influencing the way that urban dwellers buy or consume food, not to mention the way urban areas are supplied or organic waste is managed beyond the administrative boundaries of the city. Mechanisms, rules or regulations to facilitate coordination between different levels of governance to make a city region food system work are often lacking.

In 2014, France passed the Law for the Future of agriculture ("Loi d'avenir pour l'agriculture") which acknowledges the importance of local areas in developing integrated food policies. It offered the opportunity for local authorities (towns, cities, provinces and regions) to develop "Local food projects" aimed at supporting the establishment of new farmers, the development of short value chains, the supply of school canteens and other public catering facilities or the promotion of sustainable and organic agriculture. Calls for local food systems have been made to facilitate the definition of local food systems, but the allocated funds are very limited. Local authorities therefore have to rely on their own funding, or access European financing tools (e.g. European Agricultural Fund for Rural Development, or European Regional Development Fund), which limits the impacts of the Law.

In 2017, the Ministry of Agriculture and Food set up a label which recognises the quality of systemic and multi-stakeholder food initiatives and capitalises on the development of methodological tools, adding additional requirements such as social justice, food education for the youth, and food waste reduction. More than a hundred local authorities are initiating local food strategies based on the requirement set up for obtaining the label. This includes a shared diagnostic based on a multi-stakeholder dialogue aiming at identifying food issues at stake, the needs of the population, and the socio-economic and environmental constraints and opportunities offered by the territory.

In this process, local authorities have benefited

from numerous exchanges of experiences through the creation of a national network: National Network for a co-built and shared local food project[82]. By offering inspiring examples and tools, these networks have helped to accelerate the development of many food policies. These committed French cities are demonstrating dynamism and an advanced approach to ensuring the environmental and climatic resilience of cities.

Several French local authorities now have ambitious public policies driven by a strong political will. They include the French cities belonging to the MUFPP, but not only: many other levels of local governments are involved, which shows how difficult it is for a city on its own to develop coherent local food projects. Most of them must now implement coherent action plans and keep sustainable food on the political and economic agenda of local authorities and their food territories.

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[82] For more information, see http://rnpat.fr/

4.5 ITALY - The Italian Network of Researchers on Local Food Policies

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Yota Nicolarea, Sapienza, University of Rome,
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Andrea Calori, EStà Research Center
Davide Marino, Giampiero Mazzocchi, University of Molise

Many Italian cities have begun to develop urban food policies. Some of them started working in this direction before the Expo and the launch of the MUFPP (e.g. Pisa), while other cities were inspired by the Expo and its legacy (e.g. Milan and Turin). The number of Italian cities signing up to the MUFPP is growing and 20 of the 179 signatory cities are now Italian.
Beyond these 20 signatories, many other Italian cities are substantially engaged in this process but are not currently connected to each other through a network, although many of them belong to different international networks, including Healthy Cities or the Eurocities networks, which have specialised groups focused on this issue.
With this in mind, the authors launched the idea of creating a network among the Italian research community which, in recent years, has begun to get involved in this topic, in many different ways: connecting with the local authority of their own city, engaging in national or international projects and joining specialised networks, including the group of academics promoting the Agriculture in an Urbanizing Society Conference, now in its third year, and the Aesop Sustainable Food Planning working group, with the VII International Conference organised in Turin, in October 2015.
The Italian Network of Researchers on Local Food Policies encompassed a previously existing network focused on Urban Agriculture. The first meeting of the network was held on January 15, 2018 in Rome. More than 40 researchers from different cities, universities and research centres attended this meeting, covering a wide range of different specialisations: agrarian economists; geographers, designers, planners and architects, sociologists, nutritionists and others.
This founding meeting was very fruitful and produced the Network's Manifesto, a document in which the Network's fundamental principles are stated, alongside the cultural identity and background, objectives and common ground among its members. Its draft version has been presented and discussed on several occasions this year and is due to be approved at the next meeting of the Network, scheduled for January 15, 2019 in Florence.
The Italian Network of Researchers on Local Food Policies currently consists of over 150 scholars and practitioners who recognise the central role of food-related practices in the transition processes towards resilient and sustainable cities.
Promoting a sustainable food system at local level means providing healthier food, more liveable urban environments, adequate and fair remuneration for all stakeholders in the food supply chain, while developing a local economy based on new relations

between cities and territories and between farmers and consumers. These positions coincide with the core principles of the Network's Manifesto.

The international debate generally speaks of "urban food" policies, planning or practices. While they are not opposed to this term, Network members have deliberately chosen to use the term "local food policy" to emphasise the local dimension of food-related policies and practices which do not relate exclusively to the "urban" context but embrace the entire spectrum of urban-rural relations. "Local", therefore, expresses the idea that a food system can be regulated at local level, if only partially, given that the territory is not defined a priori but emerges from the implementation of food policies across functional spaces, cultural territories, policy fields and local systems for collective action around food.

The current mission of the Italian Network of Researchers on Local Food Policies is above all to discuss and inspire, in a situation in which many Italian cities seem to be interested in the topic, but very few are taking concrete steps at least towards coordinating and integrating the many initiatives, projects and policies that a multiplicity of actors, both institutional and non-institutional, are carrying out. Its future actions include research and advocacy within the different disciplinary contexts and territories, to stimulate, support and inform nascent local food policy development processes. At the same time, the Network aims to establish a debate at regional and national level that can encourage regional and national food-related policies.

4.6 SPAIN - The Spanish Network of "Ciudades por la Agroecología"

Daniel López-García, Red de Ciudades por la Agroecología

The Spanish Ciudades por la Agroecología network took its first steps in March of 2017, promoted by the city of Zaragoza (660,000 inhabitants) and the Entretantos Foundation (as technical support), and co-financed by the Daniel and Nina Carasso Foundation. The Network responds to the interest expressed by various Spanish cities in the "Agroecocities" European Network launched by Zaragoza and the Entretantos Foundation the previous year, and the broad acceptance in Spain of the Milan Pact (signed by 23 cities). It derives its impetus from the emergence, after the 2015 elections, of socially and environmentally committed municipal governments in many regional capitals. It also draws upon the work and the contacts built up over the course of two decades within the agroecology and food sovereignty movements.

The Network is a space within which knowledge and experiences can be exchanged between technical personnel in cities that are pioneering urban food policies in Spain, using webinars and other activities. It focuses on three lines of work: 1) governance and participation, 2) agroecological entrepreneurship and 3) logistical and local distribution networks. In early 2018, a working plan was approved that strengthened collaboration between the member cities through webinars and face-to-face seminars, as well as sharing campaigns and communication resources and jointly publishing technical and educational materials. The plan strengthens political advocacy goals, directing them to higher levels of the administration, and calls for integration with other national and international networks.

In the autumn of 2018, the Network is moving forward in its formal constitution process, now bringing together 21 municipalities that are home to over 9 million inhabitants. It has a technical bureau staffed by four people and holds monthly meetings with an initial Steering Committee made up of representatives from Zaragoza, Valencia, Madrid, Las Palmas de Gran Canaria, Pamplona-Iruña and Lérida-Lleida. In mid November 2018, its second plenary assembly was held in Zaragoza, focused on the issue of "Health and the Right to Food" which will serve as the unifying thread for its advocacy and communication efforts throughout 2019.

The NC4Ae understands agroecology from the perspective of sustainable and territorialised food systems, focused on the articulation of relations between the countryside and the city, and on social equality, in the spirit of the food sovereignty movement. To this effect, it is placing emphasis on the co-production of public policies by the administration and civil society, strengthening local movements and actors in food and farming, promoting organic food production in urban and metropolitan areas, building networks and infrastructure for local distribution and protecting and revitalizing agricultural spaces

in the outskirts of the city. At the same time, the NC4Ae seeks to establish alliances with Social Economy movements in order to work towards economic policies that put life at the centre. In this regard, the Network hopes to work towards greater collaboration with feminist movements.

The principle difficulties faced by the Network have to do with the novelty of having food policies on the municipal agenda: municipal workers (and especially elected representatives) have little knowledge or training in this field, and in most cities there are neither specific budgets nor staff to address these issues. The fact that municipalities do not control their own policies in agriculture, health care or education; the lack of instruments for coordination at a metropolitan level; the political confrontations between municipal and regional governments; and the hegemony of productivist ideologies in both public administrations and in rural and agrarian professional organisations all contribute to making the context a difficult one. Nevertheless, the Network is growing quickly both in its level of activity and its number of members, and an important dynamic of mutual support and collaboration is growing among the member cities, with support from both civil society and academic world.

4.7 UK - Cities in the Lead: Uk Food Systems Transformation in a Post-Brexit World

Tom Andrews, Sustainable Food Cities

For those of us fighting for better food and farming, there is nothing quite like seeing your entire national policy and regulatory framework at risk to sharpen the mind. With Brexit creating uncertainty over everything from GMOs and pesticide limits to agricultural standards and subsidies, it is fair to say we feel on something of a knife edge. In truth, however, there has been a lack of pro-active and integrated national food policy in the UK for as long as most of us can remember and, in the face of a tsunami of diet-related diseases, economic dislocation and environmental degradation, it is perhaps unsurprising that cities have decided to act. Following the inspirational lead of cities like Brighton, Bristol and London and powered through the multi-million-pound generosity of one of the UK's largest and most enlightened private foundations, Sustainable Food Cities is helping cross-sector food partnerships in nearly 60 UK cities to make healthy and sustainable food a defining characteristic of where they live. Working to a common but flexible framework covering everything from tackling food poverty and reducing food waste to transforming catering and procurement and nurturing sustainable food business, members of the Sustainable Food Cities Network are driving a fundamental shift in local food culture and the local food system.

While it is still early days, it is already clear that where they work in concert cities can have a hugely positive impact on key food-related issues, not only through the aggregated effect of changes to local policy and practice but also through the power of their combined voice in calling for national action. Working together, Sustainable Food Cities members and partners have secured pledges to serve only sustainably sourced fish covering 700 million meals each year, have put tackling food poverty at the very top of the local and national political agenda and have inspired nearly 1000 organisations to reduce sugar across a range of settings from schools and hospitals to workplaces and sports clubs.

More importantly perhaps, these cities are beginning to recognise just how significant the social, economic and environmental benefits could be if they put healthy, sustainable and local food right at the heart of their strategic planning and development and are sharing and replicating good practices as they work to realise their burgeoning ambitions. Measuring their progress through the independent benchmark of the Sustainable Food Cities award, they have begun a race to the top which could, ultimately, lead to such city-food partnerships and programmes becoming the accepted norm in the UK. Such an outcome, however, will depend to some degree on what happens elsewhere. In a globalised world, ambitious UK cities want to be up there with the best international exemplars, not just with those down the road. They want to feed off the inspiration, innovation and growing sense of global common

purpose being fostered by initiatives such as the Milan Urban Food Policy Pact and to compete with them in raising the bar for city food transformation.

If, together, we can stimulate the emergence of extensive city food partnership networks in every country and persuade governments to endorse and empower them; if we can find effective ways to distil and share the very best innovation and good practice across borders; and if we can ensure that benchmarks for city food system transformation are comparable across national jurisdictions as part of a global race to the top; then we may just create the type of food culture and food system that our people and our planet deserve.

CITY CASES

MILAN
Milan Food Policy Integrated Action on Food Losses and Waste Management

NEW YORK
Food Policy in New York City: An Overview of the Last Decade

OUAGADOUGOU
Horticulture in Ouagadougou: an Emerging Urban Food System

RIO DE JANEIRO
Governance, Participation and street markets. The path towards an Urban Food Policy

SEOUL
The Seoul Eco Public Plate Project

SYDNEY
Addressing the SDGs in Cities through Food Business Incubation: FoodLab Sydney

TEL AVIV - YAFO
Addressing Responsible Consumption and Production Via Interventions along the Food Chain

MUFPP CITIES

5. CITY CASE STUDIES

This section focuses on seven case studies of cities in different continents, providing an overview of ongoing initiatives on specific food policy topics

5.1 MILAN
Milan Food Policy Integrated Action on Food Losses and Waste Management

Andrea Magarini, Milan Food Policy Coordinator
Elisa Porreca, Milan Food Policy Office

In 2014, the Municipality of Milan with Cariplo Foundation began to study the Milan food system, focusing on the urban food cycle of the underlying context and the players operating in the city on food matters. In 2015, this analysis was shared with approximately 700 stakeholders via a process of public consultation, which led to the draft and approval of a comprehensive urban food policy with a multidimensional approach. This strategy identifies five main areas of intervention around five key priorities, including the fight against food waste. It is a strategic entry point for systemic changes, which have to be implemented, by involving several local players, such as research centres, the private sector, non-profit organisations and foundations. The policies designed to reduce food losses and food waste are combined with those regarding waste cycle management, in order to increase the overall sustainability of the system with a consistent approach to circular economy. Four guidelines were defined under the food waste priority of the Milan Food Policy and they establish the promotion at city level of: actions to inform and educate citizens and local players, in order to reduce food losses and waste; the recovery and redistribution of food losses to create relations among the local players (charities and food banks); a more rational use of packaging; a circular economy in food system management. Milan wants to achieve its goal of reducing food waste by 50% by 2030 with the help of local players. By implementing its Food Policy, the city will try to involve the highest possible number of stakeholders in order to achieve this goal.

1.1 The process of drafting the Milan Food Policy

In July 2014, the Municipality of Milan and Fondazione Cariplo signed a Memorandum of Understanding to promote and implement a comprehensive strategy on food for the city of Milan, named the Milan Food Policy (2015-2020). This was the result of a 12-month process organised into three main phases: a system analysis, public consultation and the vote of the City Council.

The first phase, devoted to an analysis of the state of Milan's Food System, saw a focus on the urban food cycle (production, processing, logistics, distribution, consumption and waste), together with the mapping of municipal policies and projects, which interrelate with the food system. The study produced a final, articulated report on the 10 main issues of the Milan food system, which summarised the results of the analyses made and became a stimulus for public debate.

The second phase was devoted to a public consultation, which began with the "10 main issues" paper to identify the priorities for action. Consultation lasted five months (from February to June 2015) and involved approximately 700 players. It was divided into several meetings with a member of the Municipal cabinet and city councillors, meetings with citizens in each of the 9 local neighbourhoods of Milan, meetings with universities and the research community, startuppers, civil society organisations and profit and non-profit companies and a town meeting attended by approximately 150 people from different social, economic and institutional circles of the city.

The results of the open consultation were the foundation for discussion in the City Council, which deliberated the 5 priorities of the Food Policy, organised in 16 addresses and 43 actions towards a more sustainable, safer, healthier, more inclusive, resilient and cohesive food system.

The process was made possible thanks to the collaboration among the local authorities of the **Municipality of Milan,** which gave institutional support to the draft and implementation of the policy, **Cariplo Foundation,** the most important grant-making organisation in Italy and co-financer of the initiative and the **Research Center EStà,** which ensured the technical and scientific support to draft the policy.

1.2 Implementation phase of the Food Policy

Owing to the complexity of the issues involved, the Municipality of Milan established a set of institutional tools in order to plan and implement measures dedicated to its food policy priorities, to facilitate the dissemination and adoption of these guidelines by other metropolitan players in collaboration with other government departments, the private sector, civil society organisations and academic bodies.

A **Control Room** between the Municipality and Cariplo Foundation was created to steer the entire food policy implementation phase, alongside the institutional mandate of the first **Deputy Mayor in charge of Food Policy,** which guarantees political commitment and has been working since 2017 with the technical support of a newly established **Food Policy Office.** A permanent group was set up to extend the remit of the Deputy Mayor to different sectors of the food system.

Furthermore, by the end of 2018, the Food Policy will have established the structure of the **Metropolitan Food Council** to promote co-responsibility of the local stakeholders for the processes in the food system on a metropolitan scale. This will involve specific, participatory approaches with an inclusive character. In parallel with the aforementioned tools, a **Monitoring System** will not only enable the issues, guidelines and actions and their related impacts to be analysed, evaluated and monitored over time, but will also indirectly increase knowledge regarding food-related issues. Each indicator will link to a specific SDG target.

2.1 The priority of Food Losses and Waste management and circular economy for food

The fourth priority of the Food Policy aims to reduce food surplus and food waste during the different stages of the food system as a form of preventing social and economic inequalities and as a tool for reducing the environmental impact.

In Milan, over 40% of food surplus is the result of the purchasing and consumption habits of households

and the average value of domestic food waste for each family is approximately EUR 450 per year.

The Municipality will adopt actions in its Food Policy and implement the international classification, which favours, in order of importance, the reduction of surplus food at all stages of the food chain, the recovery of surplus food for human consumption, the recovery for animal feed, the recovery of waste products in order to return organic substances to the soil and recovery for other non-nutritional purposes.

The policies for the reduction of waste and surplus food should be combined with those for waste cycle management to increase the overall sustainability of the system with a consistent approach to circular economy (e.g. use of fertilisers derived from food waste, wastewater reuse, etc.), while simultaneously ensuring these activities do not conflict with human consumption.

These actions will contribute to achieving the SDG Target 12.3 which states "By 2030, halve per capita global food waste at the retail and consumer levels and reduce food losses along production and supply chains, including post-harvest losses".

2.2 Four guidelines against food waste promoted in cooperation with the local players

1. The Municipality shall promote actions devoted to the citizens and operators involved in the food cycle, in order to reduce surplus and waste, e.g.: information campaigns and educational actions aimed at increasing citizens' awareness of food waste management behaviour.
2. The Municipality shall promote the recovery and redistribution of surplus food, by establishing mechanisms for sharing with other operators involved in the recovery and redistribution of surplus food, in order to monitor, evaluate and address the food system towards more transparent and more efficient surplus recovery

and redistribution mechanisms to those in need.

3. The Municipality shall foster partnerships with institutional, economic and social bodies to stimulate the rationalisation of packaging, to reduce waste related to the distribution of water and food and to encourage recyclable packaging. The Food Policy will also encourage people to disregard aesthetic standards as a criterion for selecting vegetables, via mobilisation campaigns and actions of institutional advocacy.
4. The Municipality shall apply the principles of closing the material and energy cycle to the food system from a circular economy and bio-economy perspective. It will also promote the re-use of organic waste to produce compost for local use, by facilitating the dissemination of composting plants in the area within neighbourhoods and condominiums.

3. Implementation actions

Thanks to the drafting of its Food Policy, Milan has drawn attention to, and consolidated its political mandate to propose the goal of cutting food waste by 50% by 2030. In order to reach that goal, the Food Policy Office coordinates a wide range of actions, which are each oriented towards a specific target and impact, and involve different drivers of change to the local food system:

1. a tax incentive: a waste tax reduction for food donation that acts as an umbrella initiative;
2. a holistic action among big public food drivers, the municipal agency for school canteens, in order to demonstrate that acting in the field of food policy enables set goals to be reached;
3. a local model to collect food losses in the neighbourhoods which will involve small, local players;
4. a social action in other institutional drivers, e.g.: open street markets, with a high work capacity and small quantities of food losses and the direct involvement of the end beneficiaries;
5. a wide action to study how to scale-up all the experiences.

3.1 The fiscal driver of a tax reduction for the donation of food losses

One of the most significant actions is a reduction in the waste tax, approved by the City Council in February 2018. The measure reduces the tax on waste by a maximum of 20% for the first pilot year in favour of those food businesses (supermarkets, restaurants, canteens, producers etc.) that donate their food losses to charities. The action is coordinated by different departments of the Municipality (fiscal, environmental, food policy), as part of a multi-sectoral working group. The measure further supports the mapping, strengthening and dissemination of food donation initiatives in the city, mainly led by non-profit organisations.

According to the preliminary review of participation in the first six months of implementation, it will lead to the recovery of over 840 tonnes of food. At the same time, the action is a structural variation of the Tax Rules, which enables food policy initiatives to be consolidated and local players to become permanently involved as it moves forward. The first report on the waste tax reduction will be ready in early 2019 and according to the results of the pilot year the incentive could grow to a maximum of 50% over the following year.

At its maximum, this measure could involve 10,000 private operators in the food system with an impact of EUR 1.8 million on the municipal budget. Despite its recent implementation, this initiative exclusively supported by the City of Milan already shows promising results. The Municipality of Milan is working on this issue with the Regional Authority to set up the same action in other cities and, together, to co-design additional, fiscal incentives in round-table discussions. On the one hand, priority will be given to involving the greatest number of businesses from the private sector in the food donation. On the other, it will support charities in their acquisition of skills and infrastructures to manage large quantities of food losses.

3.2 Coordinating actions in School Canteens: preventive initiatives, food donation and a ban on plastic.

The Municipality of Milan is focusing its action on areas of the food system, which can be controlled

directly, such as school canteens. Milan owns a municipal agency called "Milano Ristorazione", which directly manages the 418 school canteens of the city, with 85,000 meals per day for a total of 17 million meals per year. The municipal agency, as a major public stakeholder, is the main tester for various Food Policy actions, which enables opportunities to work together for the sustainability of the food system to be shared. Currently, there are 106 canteens (out of a total of 418) affiliated to a food bank for the recovery and redistribution of 140 tonnes of fruit and bread. Furthermore, in order to prevent fruit waste at the end of each lunch, the municipal agency "Milano Ristorazione" designed a specific programme called "Morning Break with Fruit", where children receive fruit in their classrooms as a morning snack, instead of at the end of the meal. This voluntary programme involved 17,000 children in 779 classrooms and achieved the result of preventing 17% of food waste in the schools where the programme is active.

Moreover, 31,000 reusable doggy bags were distributed to children, to take home any non-perishable leftovers.

In order to implement the food policy priority of water and food distribution and simultaneously encourage recyclable packaging, from 2016, plastic cutlery and plates have been replaced in all Milan school canteens with biodegradable materials, thus eliminating 720,000 kilos of plastic.

3.3 Local Food Waste Hub to involve local neighbourhoods

In order to support food recovery by small, local players, the Municipality entered into an agreement with a university lab of the Politecnico di Milano, to design a model and data analysis for food losses and waste management, the private sector union "Assolombarda", that represents supermarkets and companies with canteens, and the philanthropic Cariplo Foundation, which will cover the costs of infrastructures, in order to develop a pilot project to redistribute food losses in two local neighbourhoods. The "Local Food Waste Hubs" will be hosted in a space owned by the Municipality of Milan and managed by a local food bank. During the course of the pilot year of implementation (2019), the incoming and outgoing flows of donations in the hub will be monitored and the knowledge will also be spread among 35 local organisations, mapped by the Food Policy working on food donations. According to a preliminary analysis, each hub will be able to gather and redistribute approximately 70 tonnes of food per year, 250 kg per day. In 2020, the idea would be to scale up the model in all 9 neighbourhoods of the city using the lesson learned in the pilot project, to connect the institutional drivers of the main partners of the initiative.

3.4 Social actions in the open street markets

The intervention in favour of food waste reduction is also targeting open street markets, and supports a local non-profit association in collecting food losses at the end of the daily market activity. The association, called "Recup", is testing this action in 11 pilot markets out of a total of 85 for 2018, in collaboration with the municipal agency for waste management and the direct involvement of the beneficiaries. The consolidated monitoring of the first months of activities reveals that each market could recover 150 kilos of food per week for a total of 90 tons per year in the eleven pilot markets.

3.5 Next step: scaling-up these initiatives in the framework of the Circular Economy for Food

In order to increase the impact of the actions described above, the Food Policy is working on a public-private partnership, which will take a systemic approach and involve all the municipal agencies in the food system. It will give the most active, local research centres, some leading enterprises, an incubator of start-ups and a financial player specific responsibility for waste management. The agreement will aim to study all the food flows across the city of Milan and discover all the losses in the system, in order to co-design innovative solutions within the framework of circular economy for food.

Cariplo Foundation, one of the main partners of the Municipality, launched the initiative of a Circular Economy Lab at its incubator, the Cariplo Factory, to

design a specific, innovative action, which would take into special account the financial sustainability of the action.

The city is part of the Interreg CircE stakeholder group, led by the Regional Authority, an EU project on circular economy with a focus on food waste. The project focuses on developing new competencies and new urban and regional policy tools to promote circular economy. CircE assembles several stakeholders from among private sector clusters, research bodies and local authorities to explore new kinds of incentives.

4. European actions of Milan

The Municipality of Milan participates in several spaces for discussion and planning on several levels (from local to global), thus making the Milan Food Policy the result of a wider mobilisation of knowledge. Thanks to these actions on food waste management, Milan is a member of the EU Platform for Food Losses and Waste, created in 2016 by the European Commission (DG SANTE), which groups together the 27 Member States and the 37 European organisations active against food waste. Within the EU Platform, Milan gives voice to its urban shareholders on behalf of the 51 European cities that have joined the Eurocities Working Group Food. City officials from the Municipality have taken part in the plenary meetings of the platform and the "Food Donation" and "Action and Implementation" subgroup meetings in Brussels. Participation inspired the work of the Food Policy Office to deliver new initiatives on reducing food waste. Urban food topics are of common interest to the cities of all European countries and rarely has a global issue seen a more cross-cutting approach.

5. Results and lessons learned

A key feature of the success of the Food Policy of Milan is the multi-level governance approach, involving representatives from the Municipal, Metropolitan and Regional Authorities. The concerted implementation of the actions described above has enabled the Municipality of Milan to learn four key lessons:

1. cities need to analyse their food system in order to tackle food losses. It is important to have local data and to observe the main drivers shaping the food system of the city to make the correct decisions;
2. municipalities can act on the food system by facilitating the relations between the players involved, and playing the role of community leader and not just of administrative power;
3. cities must implement umbrella actions (creation of platforms, networks, ...) able to create the favourable context for the creation of initiatives involving social and economic players;
4. city networks play an important role in exchanging information and inspiring activities at different levels. It is equally fundamental to have municipal officers dedicated to food matters who can involve players and facilitate common initiatives among departments, municipal agencies, research centres, food banks, social players and major food businesses.

The growing importance of cities in the fight against food waste is undeniable: municipalities are the key players in order to achieve a 50% waste reduction by 2030.

5.2 NEW YORK

Food Policy in New York City: An Overview of the Last Decade

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In the last decade, New York City has created innovative food policies designed to improve nutritional health, reduce food insecurity, increase access to healthy affordable food and protect the environment. The city's food policies also illustrate the complexity and challenges of using the resources and mandates of municipal government to influence the intersectoral determinants of equitable and sustainable urban food environments. This chapter reviews the food policies implemented in New York City since 2008 and assesses their impact on health, poverty and the environment. It recognizes the increased salience of food policy on the city's policy agenda and the variety of government, civil society and business actors who now participate in shaping food policy. The chapter acknowledges the difficulty New York City faces in achieving significant improvements in diet-related health in the face of influences operating at state, national and global levels It concludes with several recommendations for strengthening New York City's capacity to promote more equitable food policies and environments.

For more than a century, New York City has demonstrated to other cities in the United States that the authority and resources of municipal government can be used to make healthy food, that most basic of human needs, more available, affordable and safer for all city residents. This chapter is based on a recent report assessing changes in food policy in New York City from 2008 to 2018,[83] a period during which food policy attracted significant new attention from city government and civil society. Our goal is to provide evidence that can inform more equitable solutions to urban food problems in New York City and elsewhere.

Our analysis identified the strengths and weaknesses of the cumulative recommendations for food policy that New York City and State officials have made over the last decade and assesses the contributions of the Food Metrics Reports,[84] a food policy monitoring system established by the New York City Council in 2011. We included policy decisions of the state government in our review since the state has jurisdiction over several municipal food policy domains including regulation of food retail outlets, administration of some public food benefits, and farmland protection.[85] We also analyze changes in key health and social outcomes related to food.

To situate New York City's food policy achievements in a wider context, we then compare the city's portfolio of food policy initiatives to the food policy goals articulated in the United Nations Sustainable Development Goals (SDGs)[86](listed in Appendix A) and the Milano Urban Food Policy Pact (MUFPP)[87] goals (Listed in Appendix B).[88] Finally, we suggest five directions for food policy in New York City for the coming decade.

To map the scope of food policy recommendations in New York City we reviewed 20 reports on food and food policy prepared by New York City and State public officials or agencies between 2008 and 2017, all the major public reports produced in this period. These reports contained 420 specific policy recommendations, which we classified into six broad categories based on their primary goals. These recommendations proposed city and state policies to: (1) improve nutritional well-being; (2) promote food security; (3) create food systems that support economic and community development; (4) ensure sustainable food systems; (5) support food workers; and (6) strengthen food governance and food democracy.

We found that three goals -- creating food systems that support economic and community development, ensure sustainable food systems, and improving nutritional well-being --each attracted about a quarter of the recommendations from city and state public officials, accounting for 79% of the 420 recommendations. These goals fit well within the scope and responsibilities of municipal government and enjoyed broad political support. However, nutrition policies that required changes in the practices of food businesses (e.g., taxing or limiting portion size of sugary beverages or calorie labeling) often elicited opposition, in some cases leading to defeat of such policy proposals.

Goals that could benefit from greater policy attention and more involvement of diverse constituencies include reducing food insecurity, improving pay and working conditions of food workers and strengthening food governance and food democracy. Collectively, these three goals attracted only 21% of the New York City food policy recommendations between 2008-2017.

To assess the role of the Food Metrics reporting system, we reviewed the annual Food Metrics Reports produced by the Mayor's Office of Food Policy between 2012 and 2017.2 These reports were mandated by a 2011 City Council law that aimed to increase transparency about the food system and help policymakers and advocates track progress in meeting different goals. The six Annual Food Metrics Reports show measurable progress on 51% of the 37 indicators and sub-indicators that are monitored, providing some assurance that about half of the food initiatives that the City Council selected for monitoring are

moving in the right direction.

However, these reports could be more useful to the food planning process by including more data, presented in ways that more clearly show progress or setbacks; disaggregating data geographically to enable communities to identify local problems; and made available in forms that facilitate further analysis by other public agencies, academics and advocates. Finally, most of the metrics chosen are outputs, not outcomes, limiting their value in determining whether monitored policies and programs are making a difference.[89]

Since 2008, New York City has implemented dozens of new food policies and improving access to healthy food has moved higher on the agenda of New York City Mayors, the City Council and the many civil society groups active on food issues. But effective food policy must ultimately lead to measurable improvement in nutritional well-being of the population and the creation of a more sustainable and equitable food system. To assess progress in these goals, we reviewed public data on five key health and social outcomes to analyze changes in New York City in these indicators over the last decade: fruit and vegetable consumption, sugary beverage and soda consumption, rates of obesity and overweight, diagnoses of diabetes, and the number of individuals meeting the United States Department of Agriculture definition for food insecurity.[90] Our analysis sought to determine time trends in these indicators rather than to attribute observed changes to any specific policy.

The results showed only small increases in daily fruit and vegetable consumption over the decade, modest reductions in sugary beverage consumption, persistently high rates of adult obesity and overweight with stable or widening inequitable

distribution by race and ethnicity, modest increases in the proportion of New Yorkers ever diagnosed with diabetes and modest recent declines in the number and percentages of New Yorkers experiencing food insecurity. These findings suggest that if New York City is to achieve meaningful improvements in food-related outcomes in the next decade, it will need to consider new and more ambitious policies.

Each of our methods and sources of data has strengths and weaknesses. We acknowledge the limitations of assessing food policy by counting the number of policies and are further hampered by the paucity of rigorous evaluations of the impact of these policies, either separately or in synergy with related policies. But by using multiple sources of data, we offer a comprehensive overview of food policy change in New York in the last decade and illuminate possible direction for the next decade.

How do New York food policies fit SDGs and MUFPP recommended actions?

To assess how New York City's various food policies of the last decade fit within the two global frameworks for food policy, SDGs and the MUFPP, we used these two sets of indicators to identify 67 city and state food policies that had been implemented in the last decade (although some had been approved a few years earlier). Each policy was assigned to one of the 17 SDG (See Appendix A) goals and, separately, to one of the 37 MUFPP (See Appendix B) recommended actions. Figure 1 shows that New York City and State have acted on 16 of the 17 SDG goals through local food policies, except for SDG5, which focuses on

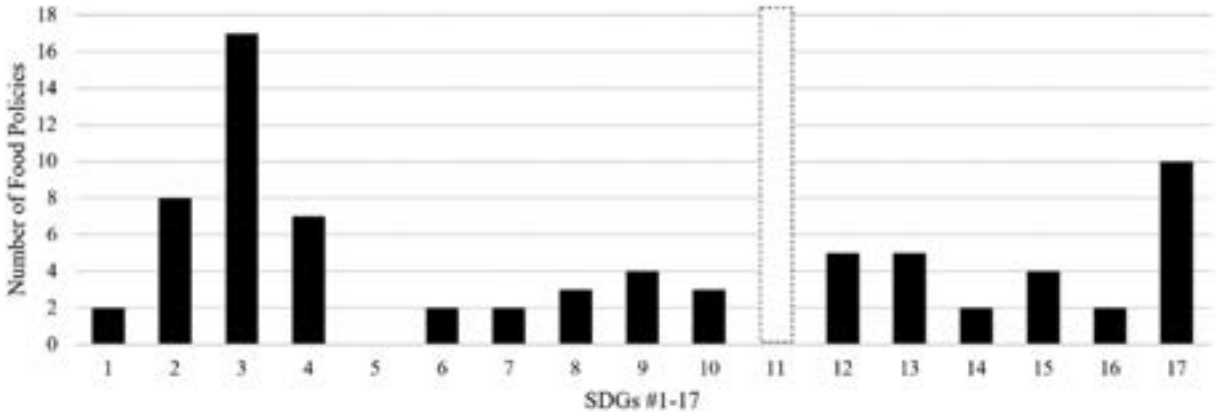

Figure 1. NYC Food Policies per SDG. Sources: Elaboration based on Freudenberg et al. (2018). Note: All local food policies examined have bearing on SDG 11 and contribute to the pursuit of more inclusive, resilient, safe, and sustainable cities.

empowering all women and girls and pursuing greater gender equality. However, some new city initiatives designed to improve women's economic roles, if effectively connected to food system goals, could contribute to SDG5.[91] are two initiatives that can aid progress in this direction.). Four goals, SDGs 2, 3, 4 and 17 – focusing on eliminating hunger, ensuring healthy lives and well-being for all, promoting inclusive and equitable quality education for all, and strengthening the means of implementation for the SDGs – have the highest number of policies implemented (overlapping with more than half of the policies examined) and six have two or fewer policies implemented.

For the MUFPP Recommended Actions (See Appendix B) , three recommended actions MRA 7, 8, and 20 – focusing on the promotion of sustainable diets, reduction of non-communicable diseases by reducing the intake of harmful ingredients, and expansion of urban and peri-urban food production – had five or more New York City or State policies implemented in the last decade and 20--more than half--had one or no policies implemented.

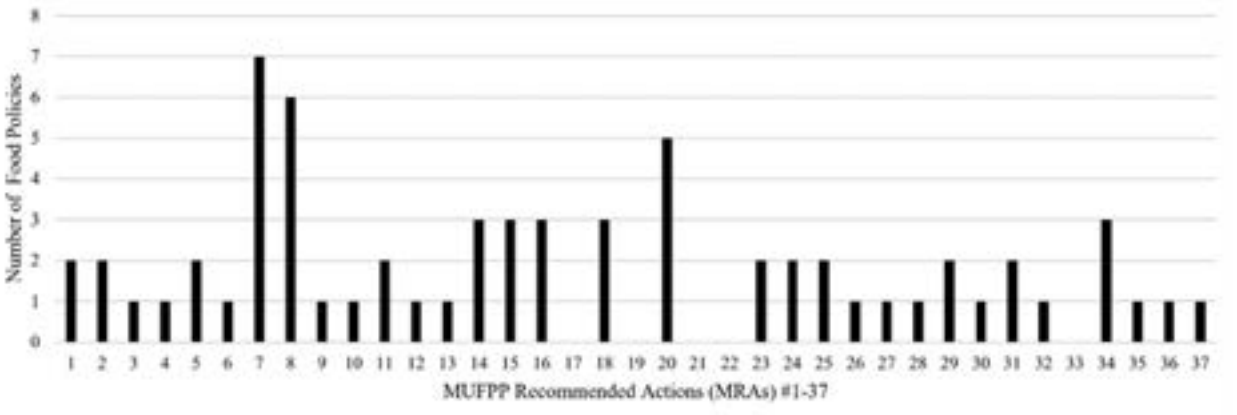

Figure 2. NYC Food Policies per Recommended Action by the Milan Urban Food Policy Pact. Source: The Authors based on the MUFPP, Freudenberg et al. (2018), and publicly available data.

As noted above, the focus of New York City's food policies has been to improve performance on its nutrition and public health goals (SDG3, MRA7-13), which have also served as the main framing used to incorporate food part of the mayoral agenda for more than a decade.

Among the city policies that contributed to this goal, some implemented even before 2008, are the city mandate chain restaurants include calorie labeling in their menus, a policy that later contributed to its adoption by the federal government in the Affordable Care Act. This precedent-setting policy was followed by a ban on artificial trans-fatty acids from restaurant foods, the adoption of city-wide nutritional food standards for publicly purchased meals and a related Good Choice Initiative designed to help city agencies and distributors to meet the food standards, and a mandatory warning menu labels for high levels of sodium in foods sold at chain restaurant. More recently, in Spring 2018, a new resolution for banning processed meats (SDG3, SDG12, MRA7) in public schools was introduced in New York City Council and is now under review.

While mainly advanced through the New York City Department of Health and Mental Hygiene (DOHMH), healthy food purchasing (SDG3, MRA7, MRA14) programs such as Health Bucks – which offers $2 coupons for every $5 of government benefits spent on farmers markets, Fruit and Vegetable Prescriptions at hospitals, and Pharmacy to Farm Prescriptions – have simultaneously allowed the city foster local economies (SDG8, MRA25) and support farmers in the New York City foodshed who sell at farmers markets (SDG2, SDG14). In fact, linking goals focused on food insecurity (SDG2, MRA14), healthy nutrition (SDG3, MRA7-13), local economies (SDG8, MRAs 17, 18, 24, 25), and farmland preservation (SDG14) has enabled the city to substantially scale up its farmers markets infrastructure (SDG9, MRA31) over the past decade to more than140 operating farmers markets, and to locate more than half of these markets in high poverty neighborhoods (SDG1 and 2). These actions demonstrate the untapped potential of food policy to serve as a lever for advancing health and food equity.

The juxtaposition of New York City's food policy landscape with the SDGs and the MRAs also reveals important opportunities for food and sustainability policy action. Among these are the role of urban food policy in promoting participatory education, training and research (MRA19), better integration between city and regional food production (MRA21), integrated land use planning and management (MRA22), gender equity (SDG5) and expanding opportunities for community-based, participatory food system planning and governance (SDG17, MRA2). New York City does not have a formal food

policy council to engage different stakeholders in food planning, or a food plan developed with public input, but a robust civil society sector in New York has ensured that diverse voices have participated in policy development and oversight.

Each of these recommendations incorporates several of the SDG and MUFPP objectives. Realizing these goals will require enlisting new constituencies in the food policy process; better integrating food policy with policies in other sectors such as housing, economic development, environmental protection and education; and creating ongoing mobilizations that persuade policy makers and that elites that benefit from a dysfunctional food system that the risks of not acting are greater than those of action.

Recommendations

To achieve further progress in advancing healthier, more equitable and sustainable food policies in New York City over the next decade, our review of food policy since 2008 suggests several directions:

1. Building on the accomplishments of the six Food Metrics Report produced since 2012, New York City should revise the process to include clearer health and food environments outcomes and should more fully engage a wider variety of constituencies in interpreting Food Metrics findings.
2. New York City should develop a multiyear food plan that sets targets for achieving specific health and food system outcomes. Reducing inequitable access to healthy affordable food should be a high priority for the plan.
3. New York City should continue to strengthen and develop its public sector in food, defined as institutional food, food benefits and other public programs that increase access to healthy affordable food.
4. As New York City charts its plans for economic development, it should consider the impact of zoning, housing and employment policies on municipal food environments.
5. As the federal government acts or consider acting to reduce regulation of food industry and cut back food benefits programs, New York City and State should develop plans to protect New Yorkers from the adverse consequences of such policies.

NOTES

[83] Freudenberg N, Cohen N, Poppendieck J, Willingham C. (2018). Food Policy in New York City Since 2008: Lessons for the Next Decade. New York: CUNY Graduate School of Public Health and Health Policy, 2018.

[84] New York City Mayor's Office of Food Policy (2016). Food Metrics Report; The City of New York: New York, NY, USA.

[85] Willingham C, Rafalow A, Lindstrom L, Freudenberg N. (2017). *The CUNY Institute of Urban Food Policy Guide to Food Governance in New York City*. CUNY Graduate School of Public Health and Healthy Policy.

[86] United Nations. Sustainable Development Goals. 2015, https://sustainabledevelopment.un.org/?menu=1300

[87] Milano Urban Food Policy Pact. Monitoring Framework, 2017. Available at http://www.milanurbanfoodpolicypact.org/monitoring-framework/

[88] Ilieva, R. T. (2017). Urban Food Systems Strategies: A Promising Tool for Implementing the SDGs in Practice. Sustainability. 9(10), 1707.

[89] Freudenberg N, Cohen N, Willingham C. The Role of Metrics in Food Policy: Lessons from a Decade of Experience in New York City. Journal of Agriculture, Food Systems, and Community Development 2018 (in press, will be out in next month)

[90] United States Department of Agriculture. Definitions of Food Security. Last updated September 18, 2018. https://www.ers.usda.gov/topics/food-nutrition-assistance/food-security-in-the-us/definitions-of-food-security.aspx

[91] Office of the Mayor. Press Release. Mayor de Blasio Announces Bold New Vision for the City's M/WBE Program. September 28, 2016. https://www1.nyc.gov/office-of-the-mayor/news/775-16/mayor-de-blasio-bold-new-vision-the-city-s-m-wbe-program#/0

Appendix A

Table 1. The SDGs and NYC & State food policies, programs, and initiatives

Sustainable Development Goal (SDG)		NYC & NYS Food Policy, Program, or Initiative
SDG1	End Poverty in All Its Forms Everywhere	1. NYS increased the minimum wage (2015) 2. Protected employees in large grocery stores from immediately losing their jobs after an ownership transition (Local Law 11 of 2016)
SDG2	End Hunger, *Improve Nutrition (*), and Promote Sustainable Agriculture (**)* *(*) see SDG3* *(**) see SDGs 13,15*	3. Launched Food Stamp Paperless Office System (2007) 4. NY State expanded SNAP eligibility and extended recertification (2008-2016) 5. Implemented online application for NYC public school meal programs (2008) 6. Began rollout to expand the Breakfast in the Classroom program in NYC public schools (2015) 7. Implemented universal free school lunch in most New York City middle schools (2014; 2017) 8. Established the NYC Council School Food Pantry Initiative (2016; 2017) to provide students in 16 schools with access to food, basic personal items and feminine hygiene products.
SDG3	Healthy Lives and Well-Being for All at All Ages	9. NYC DOHMH ran several media campaigns to discourage consumption of unhealthy food (2009-2017) 10. Limited sugary drinks in child care centers (amendment to NYC Health Code Article 47) (2007; 2012) 11. Banned artificial trans-fat in NYC restaurants (amendment to NYC Health Code Article 81) (2007) 12. Required chain restaurants to post calorie information on menus/menu boards (amendment to NYC Health Code Article 81) (2008; 2015) 13. Established National Salt Reduction Initiative, a voluntary partnership initiated by NYC DOHMH (2009) 14. Required sodium warning labels on chain restaurant menus (2015; 2016) 15. Launched Health Bucks Program (2005; 2012; 2016) 16. Launched Healthy Bodegas/Shop Healthy NYC! Program (2006; 2007; 2012) 17. Launched a Pilot Plant-Based Lifestyle Medicine Program at public hospitals and clinics in New York City (2017) 18. Launched the Good Choice Initiative (2014) – The Good Choice nutrition criteria apply to 25 food and beverage categories, including prepackaged snacks, sliced bread, and salad dressing. 19. Introduced Agency Meals and Food Standards (Mayoral Executive Order 122 of 2008) 20. Launched Fruit and Vegetable Prescription Pilot program at city hospitals (2013; 2016) 21. Launched the Food Retail Expansion to Support Health (FRESH) program (2009) 22. Required City restaurants to post letter-grade cards (A, B, C) reflecting sanitary inspection results (2010), by amending section 81.51 of the New York City Health Code. 23. Adopted Local Law 108 of 2017 which requires the NYC Department of Health and Mental Hygiene to extend the A-B-C grading program to mobile food vending units. 24. Expanded number of salad bars in NYC public schools (2005; 2012) 25. Piloted Garden to Café program in 20 New York City public schools (2008) 26. Launched Grow to Learn NYC initiative (2011)

SDG4	Inclusive and Equitable Quality Education and Lifelong Learning Opportunities for All	• *Expanded number of salad bars in NYC public schools (2005; 2012)*[92] • *Piloted Garden to Café program in 20 New York City public schools (2008)* • *Launched Grow to Learn NYC initiative (2011)* • *Implemented online application for NYC public school meal programs (2008)* • *Began rollout to expand the Breakfast in the Classroom program in NYC public schools (2015)* • *Implemented universal free school lunch in most New York City middle schools (2014; 2017)* • *Established the NYC Council School Food Pantry Initiative (2016; 2017) to provide students in 16 schools with access to food, basic personal items and feminine hygiene products.*
SDG5	Gender Equality and Empowerment of All Women and Girls	27. [Launched the Mayor's Crowdfunding Program for NYC Women Start Ups (2018) **Not focusing explicitly on food businesses*]
SDG6	Availability and Sustainable Management of Water and Sanitation for All	28. Installed water jets in many NYC public schools (2008) 29. Renovated the City wastewater treatment plant in Newtown Creek (Brooklyn, NY) increasing capacity by 50% and ensuring compliance with the US Clean Water Act (2009; 2014). The plant uses eight anaerobic digester eggs; the produced gas will heat 2,500 homes.
SDG7	Access to Affordable, Reliable, Sustainable and Modern Energy for All	30. Required heating oil sold or used by the City to contain a percentage of biodiesel (Local Law 119 of 2016) • *Renovated the City wastewater treatment plant in Newtown Creek (Brooklyn, NY) increasing capacity by 50% and ensuring compliance with the US Clean Water Act (2009; 2014). The plant uses eight anaerobic digester eggs; the produced gas will heat 2,500 homes.*
SDG8	Inclusive and Sustainable Economic Growth and Decent Work for All	31. Protected fast food workers from unpredictable scheduling and payment (the Fair Work Week legislative package: Local Laws 98, 99, 100, 106, 107) (2016-2017) 32. Introduced Local Food Procurement Guidelines for NYC Agencies (Local Law 50 of 2011) 33. NYS launched the Farmers Market Grant Program (2009)

NOTES

[92] *Note*: Text in *italics* denotes NYC or NYS policies, programs, or initiatives already mentioned in relation to another SDG.

SDG9	Resilient Infrastructure, Inclusive Industrialization, and Innovation	34. Invested $150 million to revitalize the Hunts Point Terminal Produce Market 35. NYS invested $15 million in the development of Greenmarket Regional Food Hub at Hunts Point (2016) 36. NYEDC aided the restoring the La Marqueta public market in East Harlem (2009; 2014) and supported the development of a commercial kitchen incubator 37. Established 1,000 permits for Green Carts (Local Law 9) (2008; 2010)
SDG10	Reduce Inequality within and among Countries	● *NYS increased the minimum wage (2015) The new law requires that any person working at a Fast Food Establishment must be paid the Minimum Wage for Fast Food Workers. After four annual increases started in 2015, the wage will be $15/hour in 2018.* ● *Implemented universal free school lunch in most New York City middle schools (2014; 2017)* ● *NY State expanded SNAP eligibility and extended recertification (2008-2016)*
SDG11	Inclusive, Safe, Resilient, and Sustainable Cities	**See the city and state policies and initiatives pertinent to all other SDGs*
SDG12	Sustainable Consumption and Production	38. Adopted a Zero Waste target by 2030 through the OneNYC Plan (2015) and committed to eliminating waste going to landfills, by prioritizing recovery. reuse, and recycling. 39. Launched the Food Waste Challenge (2013) 40. Launched the NYC Mayor's Zero Waste Challenge (2016) 41. Established a compost pilot program for curbside collection of organic waste (Local Law 77 of 2013); expanded 2017 42. Introduced Packaging Reduction Guidelines (Local Law 51 of 2011)
SDG13	Combat Climate Change and Its Impacts	43. Commissioned New York City Food Distribution & Resiliency Study (2016) *No comprehensive disaster reduction plan or strategy has been devised to date. 44. Extended the license agreement for city community gardens (2011) 45. Launched New York City Housing Authority's first large-scale urban farm (2013; 2016) 46. Adopted the NYC Zone Green Amendment (2012) to reduce height and size restrictions for rooftop greenhouses atop commercial buildings; 47. Launched NYS Community Growers Grant Program (2018)

SDG14	Sustainable Life below Water	48. Instituted the Green Infrastructure Grant Program (2011) 49. Supported protection of drinking water quality in the New York City watershed through the Watershed Agricultural Program.
SDG15	Sustainable Life on Land, No Land Degradation and Biodiversity Loss	50. Established New York State Grown & Certified Program (2016) 51. Launched New York Thursdays Program - 50% of Thursday lunch menu at DOE schools from within New York State (2015) 52. Launched New York Grown for New York Kids: "No Student Goes Hungry" Program - quadruples state reimbursement for school meals ($0.25/meal) for K-12 schools that purchase 30% of their lunch ingredients from New York farms. 53. Established GreenThumb community gardening program (1978) which currently aids (e.g., through technical, workshops, programming, materials) over 550 gardens throughout the city
SDG16	Access to Justice for All, Peaceful and Inclusive Societies	54. Instituted a Garden Review Process (2010) through the addition of a new chapter in the City Rules (Title 56: Department of Parks and Recreation, Section 6–05). ● *Protected employees in large grocery stores from immediately losing their jobs after an ownership transition (Local Law 11 of 2016)*
SDG17	Stronger Means of Implementation and Partnership for the Goals	55. Established New York State Food Policy Council in 2007, renewed in 2016 as NYS Council on Hunger and Food Policy 56. Established first Food Policy Coordinator position in Mayor's Office in 2008, Office of the Director of Food Policy (2014) 57. Developed a task force and consulted with hundreds of NYC residents to develop FoodWorks Report (2010) 58. Established the NYC Food Assistance Collaborative (2014) 59. Launched an Urban Agriculture website summarizing information about New York City programs and regulations pertaining to agricultural production and sales (2018) 60. Developed over 20 food policy reports (2008-2017) and 420 recommendations *No comprehensive food system plan has been devised to date. 61. Required annual Food Metrics Reports (Local Law 52 of 2011) and 37 indicators. 62. As part of the Five Borough Food Flow food system distribution and resiliency study, developed a primary dataset and analytical tools for the City (2016) 63. Launched the NYC Food Assistance Collaborative (2014) 64. Joined the Urban School Food Alliance (2015)

Appendix B

Table 1. MUFPP Recommended Actions and NYC & State food policies, programs, and initiatives

MUFPP Goal	MUFPP Recommended Action (MRA)		NYC & NYS Food Policy, Program, or Initiative
(1) ENSURING AN ENABLING ENVIRONMENT FOR EFFECTIVE ACTION, GOVERNANCE	MRA1	Facilitate collaboration across city agencies and departments	1. Established New York State Food Policy Council in 2007, renewed in 2016 as NYS Council on Hunger and Food Policy 2. Established first Food Policy Coordinator position in Mayor's Office in 2008, Office of the Director of Food Policy (2014)
	MRA2	Enhance stakeholder participation	3. Developed a task force and consulted with hundreds of NYC residents to develop FoodWorks Report (2010) 4. Established the NYC Food Assistance Collaborative (2014)
	MRA3	Identify, map and evaluate local initiatives	5. Launched an Urban Agriculture website summarizing information about New York City programs and regulations pertaining to agricultural production and sales (2018)
	MRA4	Develop or revise urban food policies and plans	6. Developed over 20 food policy reports (2008-2017) and 420 recommendations **No comprehensive food system plan has been devised to date.*
	MRA5	Develop or improve multisectoral information systems	7. Required annual Food Metrics Reports (Local Law 52 of 2011) and 37 indicators. 8. As part of the Five Borough Food Flow food system distribution and resiliency study, developed a primary dataset and complex analytical tools for the City (2016)
	MRA6	Develop a disaster risk reduction strategy	9. Commissioned New York City Food Distribution & Resiliency Study (2016) **No comprehensive disaster reduction plan or strategy has been devised to date.*

(2) SUSTAINABLE DIETS AND NUTRITION	MRA7	Promote sustainable diets (*education & communication*)	10. Launched Healthy Bodegas/Shop Healthy NYC! Program (2006; 2007; 2012) 11. NYC DOHMH ran several media campaigns to discourage consumption of unhealthy food (2009-2017) 12. Expanded number of salad bars in NYC public schools (2005; 2012) 13. Piloted Garden to Café program in 20 New York City public schools (2008) 14. Established 1,000 permits for Green Carts (Local Law 9) (2008; 2010) 15. Launched Grow to Learn NYC initiative (2011) 16. NYC DOHMH ran several media campaigns to discourage consumption of unhealthy food (2009-2017)
	MRA8	Address non-communicable diseases associated with poor diets and obesity (*reducing intake of harmful ingredients*)	17. Limited sugary drinks in child care centers (amendment to NYC Health Code Article 47) (2007; 2012) 18. Banned artificial trans-fat in NYC restaurants (amendment to NYC Health Code Article 81) (2007) 19. Required chain restaurants to post calorie information on menus/menu boards (amendment to NYC Health Code Article 81) (2008; 2015) 20. Established National Salt Reduction Initiative, a voluntary partnership initiated by NYC DOHMH (2009) 21. Required sodium warning labels on chain restaurant menus (2015; 2016) 22. Launched a Pilot Plant-Based Lifestyle Medicine Program at public hospitals and clinics in New York City (2017)
	MRA9	Develop sustainable dietary guidelines	23. Launched the Good Choice Initiative (2014) – The Good Choice nutrition criteria apply to 25 food and beverage categories, including prepackaged snacks, sliced bread, and salad dressing.
	MRA10	Adapt standards and regulations to make sustainable diets and safe drinking water accessible	24. Agency Meals and Food Standards (Mayoral Executive Order 122 of 2008)
	MRA11	Explore regulatory and voluntary instruments	25. Launched Fruit and Vegetable Prescription Pilot program at city hospitals (2013; 2016) 26. Launched Pharmacy to Farm Prescription Program (2017)
	MRA12	Encourage joint action by health and food sectors	27. Launched the Food Retail Expansion to Support Health (FRESH) program (2009)
	MRA13	Invest in and commit to achieving universal access to safe drinking water and adequate sanitation	28. Installed water jets in many NYC public schools (2008)

(3) SOCIAL AND ECONOMIC EQUITY	MRA14	Use cash and food transfers	29. Launched Health Bucks Program (2005; 2012; 2016) 30. Launched Food Stamp Paperless Office System (2007) 31. NY State expanded SNAP eligibility and extended recertification (2008-2016)
	MRA15	Reorient school feeding programmes	32. Implemented online application for NYC public school meal programs (2008) 33. Began rollout to expand the Breakfast in the Classroom program in NYC public schools (2015) 34. Implemented universal free school lunch in most New York City middle schools (2014; 2017)
	MRA16	Promote decent employment for all	35. NYS Increased the minimum wage (2015) 36. Protected employees in large grocery stores from immediately losing their jobs after an ownership transition (Local Law 11 of 2016) 37. Protected fast food workers from unpredictable scheduling and payment (the Fair Work Week legislative package: Local Laws 98, 99, 100, 106, 107) (2016-2017)
	MRA17	Encourage and support social and solidarity economy activities	38. Launched the Mayor's Crowdfunding Program for NYC Women Start Ups (2018) **Not focusing explicitly on food businesses*
	MRA18	Promote networks and support grassroots activities	39. Established the NYC Council School Food Pantry Initiative (2016; 2017) to provide students in 16 schools with access to food, basic personal items and feminine hygiene products. 40. Launched the NYC Food Assistance Collaborative (2014) 41. Joined the Urban School Food Alliance (2015)
	MRA19	Promote participatory education, training and research	

(4) FOOD PRODUCTION	MRA20	Promote and strengthen urban and peri-urban food production	42. Extended the license agreement for city community gardens (2011) 43. Launched New York City Housing Authority's first large-scale urban farm (2013; 2016) 44. Green Infrastructure Grant Program (2011) 45. Adopted the NYC Zone Green Amendment (2012) to reduce height and size restrictions for rooftop greenhouses atop commercial buildings; 46. Launched NYS Community Growers Grant Program (2018)
	MRA21	Seek coherence between the city and nearby rural food production	
	MRA22	Apply an ecosystem approach to guide holistic and integrated land use planning and management	
	MRA23	Protect and enable secure access and tenure to land	47. Supported preservation of farms in New York City watershed through the Watershed Agricultural Program 48. Instituted a Garden Review Process (2010) through the addition of a new chapter in the City Rules (Title 56: Department of Parks and Recreation, Section 6–05).
	MRA24	Help provide services to food producers in and around cities	49. Established GreenThumb community gardening program (1978) which currently aids (e.g., through technical, workshops, programming, materials) over 550 gardens 50. New York State Grown & Certified Program (2016)
	MRA25	Support short food chains	51. Launched New York Thursdays Program - 50% of Thursday lunch menu at DOE schools from within New York State (2015) 52. Launched New York Grown for New York Kids: "No Student Goes Hungry" Program - quadruples state reimbursement for school meals ($0.25/meal) for K-12 schools that purchase 30% of their lunch ingredients from New York farms.
	MRA26	Improve (waste) water management and reuse	53. Renovated the City wastewater treatment plant in Newtown Creek (Brooklyn, NY) increasing capacity by 50% and ensuring compliance with the US Clean Water Act (2009; 2014). The plant uses eight anaerobic digester eggs; the produced gas will heat 2,500 homes.

(5) FOOD SUPPLY AND DISTRIBUTION	MRA27	Assess the flows of food to and through cities	54. Commissioned New York City Food Distribution & Resiliency Study (2016) Five Borough Food Flow
	MRA28	Support improved food storage, processing, transport and distribution	55. Invested $150 million to revitalize the Hunts Point Terminal Produce Market
	MRA29	Assess, review and/or strengthen food control systems	56. Required City restaurants to post letter-grade cards (A, B, C) reflecting sanitary inspection results (2010), by amending section 81.51 of the New York City Health Code. 57. Adopted Local Law 108 of 2017 which requires the NYC Department of Health and Mental Hygiene to extend the A-B-C grading program to mobile food vending units.
	MRA30	Review public procurement and trade policy	58. Local Food Procurement Guidelines for NYC Agencies (Local Law 50 of 2011)
	MRA31	Provide policy and programme support for municipal public markets	59. NYS launched the Farmers Market Grant Program (2009) 60. NYEDC aided the restoring the La Marqueta public market in East Harlem (2009; 2014) and supported the development of a commercial kitchen incubator
	MRA32	Improve and expand support for infrastructure	61. NYS invested $15 million in the development of Greenmarket Regional Food Hub at Hunts Point (2016)
	MRA33	Acknowledge the informal sector's contribution	
(6) FOOD WASTE	MRA34	Convene food system actors to assess and monitor food loss and waste reduction	62. Established a compost pilot program for curbside collection of organic waste (Local Law 77 of 2013); expanded 2017 63. Required heating oil sold or used by the City to contain a percentage of biodiesel (Local Law 119 of 2016) 64. Packaging Reduction Guidelines (Local Law 51 of 2011)
	MRA35	Raise awareness of food loss and waste	65. Launched the NYC Mayor's Zero Waste Challenge (2016)
	MRA36	Collaborate with the private sector along with research, educational and community-based organisations	66. Launched the Food Waste Challenge (2013)
	MRA37	Save food by facilitating recovery and redistribution for human consumption of safe and nutritious foods	67. Adopted a Zero Waste target by 2030 through the OneNYC Plan (2015) and committed to eliminating waste going to landfills, by prioritizing recovery. reuse, and recycling.


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5.3 OUAGADOUGOU

Horticulture in Ouagadougou: an Emerging Urban Food System

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The population of Ouagadougou has been growing at a very high pace for several decades. The demographic and spatial growth of the city is accompanied by a consumption of agricultural space, which causes difficulties for the inhabitants in the supplying of food products, whose demand is growing. Faced with this scenario, public policies struggle to find the ideal option among different, sometimes opposite needs. At the same time the local population – first informally, then in an increasingly institutionalized way, with the support of international cooperation – has developed urban and peri-urban horticultural activities, especially around the artificial basins close to the capital. The paper analyzes more specifically the case of the local food system that emerged around the Loumbila dam.

1. Urban expansion and food security in Ouagadougou

According to UN figures, Ouagadougou is one of the fastest growing cities in the world: over the past 15 years its population has more than doubled, rising from 1.13 million inhabitants in 2000 to 2.55 million inhabitants in 2015.

From the "big village", as it appeared to the eyes of Louis-Gustave Binger in 1885, to the great village that it became after the independence, Ouagadougou remained for a long time a rural-looking capital, without an adequate planning. Only starting from the great allotment stages of the revolution period (1983-1987) the city began to acquire the soul of a real capital. Led by the slogan "one family, one lot", the revolutionary state has proceeded to the allotment of the peripheral sectors, i.e. of the spontaneous settlement areas. The city has thus experienced an unprecedented spatial and demographic growth, which doubled almost every decade. After this initial impulse, urban growth has not stopped yet.

Because of the many allotments of the revolution and post-revolution period, but also due to the will of every citizen to access the property, the city is characterized by a "widespread urbanization" marked by the juxtaposition of spontaneous neighbourhoods and new neighbourhoods. The whole of these urbanization dynamics has increased the metropolization of the city, which extends far beyond its administrative limits. Urban authorities have produced several administrative plans (the most important ones in 1984 and 2012), setting new limits and eroding the peri-urban agricultural space.

The risk for a city that expands to the point where it consumes all the space for food supply is to encounter difficulties in satisfying its food needs, especially

if its chances of importing food from abroad are limited, as it happens in low-income countries.

The awareness of this situation has therefore led over time to the construction of an – initially informal and then increasingly structured – *"urban food system"* which allowed the development of urban agriculture, while at the same time supported the supplying of the city, starting from its outskirts.

2. The development of horticulture in Ouagadougou

Formerly circumscribed to expats and intellectuals during the colonial period, over the last few decades the consumption of horticultural products has exploded in Ouagadougou, partly linked to population growth, but mostly linked to the increase of the middle-class and the arrival of foreign people mainly connected with international cooperation. However, in addition to products consumed primarily by expats, however, in recent years it has also increased rapidly the production of local vegetables, appreciated above all by families with low incomes.

As a whole, vegetables have the advantage of improving the food and nutritional situation of families, thanks to their high content of micronutrients. Given the high demand for these products and the lack of urban production, the horticultural products of the neighboring municipalities try to satisfy the demand of the capital. The development of these cultivations in the immediate outskirts of the city of Ouagadougou takes into account the perishable nature but above all the ineffectiveness of the cold chain.

In a context strongly driven by the search for residential space, for a long time local authorities have considered agriculture as illegitimate within the Sahelian capital. Faced with the will to make the city a space reserved for secondary and tertiary activities, some agricultural activities continued, but in difficult and precarious conditions, especially along the riverbanks. It has been precisely the interstitial space that runs along the waterways, qualified by urban planners as *"non-aedificandi"*, to be progressively colonized by urban horticulture, in addition to the water supply reservoirs created along with the construction of three dams in the northern part of the capital.

The strong demand for vegetables in Ouagadougou, along with the support of international cooperation for horticultural production improvement, have progressively made clear the importance of maintaining and developing urban and peri-urban agriculture. At the same time the international scientific debate on urban agriculture has highlighted the possible cohabitation between a form of urban agriculture and the city. These different contributions have progressively led local authorities to accept the idea of an agricultural space inside the city. In 1999 a new guidance document, the *Schéma Directeur d'Aménagement* du Grand *Ouaga (SDAGO)*, therefore legalized the agricultural practice in the interstitial spaces of the city and its suburbs. As a result of this document, an intensive farming area has been maintained south of the city and around artificial reservoirs and wetlands, within and in the immediate outskirts of Ouagadougou.

3. Artificial reservoirs around the capital

On the outskirts of Ouagadougou, 71 artificial water basins were counted, whose surface is equivalent to 3700 hectares. The fields around these basins are sown with wheat and organized in horticultural cultivations to supply the capital. The best known horticultural areas are located within a radius of 30 km from Ouagadougou. These are artificial valleys and reservoirs located in the rural districts of Komsilga (the Kalzi dam and the Boulbi dam), Koubri (Wedbila dam), Tanghin Dassouri (*bas-fond*), Pabré (Kamboinsé dam), Loumbila (Loumbila dam).

This development of urban and peri-urban agriculture, however, is confronted with a very significant challenge concerning the competition in the use of water resources between domestic consumption and agriculture. Along with the increase of the population, in fact, the demand for drinking water is rapidly growing: current consumption is 160,000 cubic meters per day, while the two main stations

produce 150,000, with a daily deficit of 10,000 cubic meters. Moreover, the quality of the groundwater is worsening, due to the chemical inputs used in agriculture. In order to reduce pollution, the idea of the Ministry of Environment and of the Nakambé Water Agency is to limit agriculture in the basins around Ouagadougou, addressing production towards organic methods.

The case of the local food system that has emerged around the Loumbila reservoir is very significant, because it shows the evolution of the sector and the possible positive interaction between different stakeholders of the local agri-food system.

4. Horticulture and international cooperation around the Loumbila reservoir

The Loumbila reservoir was created during the colonial period in order to supply the capital with water, at a time when Ouagadougou still had only a few tens of thousands of inhabitants and the urban demand for agricultural goods was very limited. The project therefore did not provide for specific strategies for the agricultural exploitation of the land surrounding the reservoir and the horticulture initiatives established on their own, in parallel with the expansion of the urban market produced by the demographic growth and the transformation of the eating habits described above.

In order to make the most out of the productive and commercial potentials created by the increasing consumption of horticultural products, local farmers have organized themselves into village groups, both with the aim of rationalizing investments and establishing themselves as recognizable subjects with respect of the external stakeholders interested in supporting agriculture initiatives in the area. In this way, the communities of horticulturists have become recognizable for the varied world of international cooperation, triggering a process of socio-territorial transformation that is still under way. It is possible to follow these events through the case of the Italian NGO Mani Tese.

The action of Mani Tese in this area began in the late nineties with a project funded by the European Union, aimed at supporting the villages most threatened by urban expansion. At this stage the "traditional" approach to rural areas was still evident, and interventions were all aimed at supporting subsistence agriculture based on the cultivation of millet and sorghum.

The NGO strategy changed in 2003, when the first projects to support horticulture was financed, in the villages of Tangzougou, Poedogo and Daguilma. In this phase the projects were mainly aimed at increasing production by using foot pumps instead of the traditional watering cans, which led to an increase of areas dedicated to horticulture. In the following years the horticulture projects started multiplying and, starting from 2007, they became more structured, promoting not only the increase in production, but also the marketing. In this phase Mani Tese also started to work on the storage of products, with the construction of five warehouses, and on the organization of producers, through the establishment of second level associative structures.

5. Agroecology

A third phase of horticulture projects in Loumbila can be identified starting from 2014, when the NGO activity became part of a broad and multi-year cooperation program involving several Italian organizations present in Burkina Faso (ACRA, CISV, LVIA, Mani Tese, Slow Food, CESPI) financed by the Association of Italian Foundations and Savings Banks (ACRI).

A first element of novelty was the interaction among different subjects of cooperation, through which agricultural activities complementary to horticulture were developed. An example is particularly the cultivation of soy for the production of a type of tofu, used in local cuisine as an alternative to the cheese produced by nomad breeders, more expensive and less digestible.

Moreover, a vegetable garden led following the principles of agroecology was developed with the support of Slow Food. The work of Slow Food on agroecology introduced a further element of novelty, namely the specific attention to product quality. The first

horticulture projects, in fact, were aimed at increasing production, rather than quality, because the farmers did not believe that on the local market the increase in quality could find recognition such as to compensate for the relative increase in costs.

The new projects, instead, envisage the creation of fields for the reproduction of onions that will be certified by the Institute for Environment and Agricultural Research (INERA). The marketing support activities are maintained as well through the participation in local agricultural fairs and, above all, through the establishment of points of sale in Ouagadougou and in the rural municipality of Loumbila.

6. From the informal to the institutional

Peri-urban agriculture has gradually come to the attention of international cooperation first and of local and national institutions then. The development

of horticulture, in fact, was rather the result of an informally developed strategy than the outcome of specific policies carried out by the institutions. The international NGOs themselves, accompanied and supported a process already in place, which had initially escaped to their analysis. Within certain limits this is a strategy that has developed against official strategies. On one hand, horticulture develops by subtracting water from the Loumbila dam – that had been built for the water supply of the capital, and not to promote the agricultural development of the area – on the other hand, the intervention of international cooperation was at first directed towards supporting subsistence agriculture, interpreting the relationship with the city exclusively in terms of risk and not as an opportunity.

After an initial refusal, local institutions have supported this practice, even if there is still no real strategy to develop the local agri-food system centered on horticulture. The adhesion of Ouagadougou to the Milan Food Policy Pact could represent an interesting opportunity in this direction to transform a widespread good practice into an actual *food policy*. The inclusion within an international network of cities could also allow the local administration of Ouagadougou to share its good practices with other cities of the Global South that share some of the challenges in the development

of local agri-food systems.
The food market that underlies the development of such systems in large cities in the Gobal South has very different characteristics from those in the Global North. The so-called "*quality turn*" that in the Global North has been directly associated with the development of local food networks, in the Global South is strongly influenced by the socio-economic context: urban food demand, in fact, prevalently comes from the low income population, which often sees high quality food as economically out of reach. Such dynamic makes it even more difficult to introduce agroecological practices and diversify production by promoting the spread of *cultivars* which are less productive, but have greater environmental or cultural value.

The fragility of the urban market does not imply the abandonment of strategies aimed at improving the quality of the product, but the link between the development of peri-urban agriculture and the growth in the demand for quality food needs to be built. At the moment, it is not given as it is in the Global North, where local food networks have developed in close relation to the development of innovative agriculture with strong a environmental commitment.

The development of a demand for more expensive but higher quality products is primarily linked to the emergence, in recent years, of the middle-class in sub-Saharan Africa. However, the growth of the middle-class is not the only element that could lead to greater attention to qualitative aspects. The absence of chemical *inputs*, in particular, is a key element for the integration between peri-urban agriculture and the demand by the urban population for drinking water. Furthermore, agroecological practices can bring other benefits to the producers, economic ones included: firstly by guaranteeing savings in the purchase of chemical fertilizers, but also more indirectly, favoring the development of better products. In the case of the Loumbila farmers, for example, it is possible to observe how the varieties of onions cultivated according to the principles of agroecology, although smaller, last longer, thus allowing farmers to put them on the market in a period of the year when prices are up to four times higher than in the maximum production period.

7. "Eat local, think global"

The issue of the fragility of the urban market introduces a further element and a different scale of analysis. The cities of the Global South, in fact, are constantly confronted with relevant food safety issues: for a large portion of population the access to food is questioned by the fluctuation of prices and the diet is poorly diversified since is mostly based on few imported cereals. No development of peri-urban agriculture and local food networks is possible without adequate social policies supporting the poorest people and without an adequate agri-food policy protecting local agriculture instead of large foreign producers. The development of local food networks in this context, therefore, cannot ignore choices on a national scale over which local communities and NGOs struggle to intervene. The consistency between EU trade and agriculture policies and cooperation strategies is in this sense a particularly relevant topic.
The case of Ouagadougou, therefore, shows very clearly the strength and potential of local communities, but at the same time highlights the need to include these initiatives within national and international strategies. In this sense, the United Nations Sustainable Development Goals (SDGs) constitute a very important opportunity to overcome the phase of good spontaneous practices to adopt a strategic perspective. More specifically, objectives 2 and 11 constitute the strategic framework in which these initiatives must be place: on one hand the challenge of eliminating hunger by 2030 goes through the construction of sustainable food policies in the cities of the Global South, on the other hand the sustainability of urban centers of the future cannot ignore the development of local agro-food systems, especially in cities whose population is growing so rapidly as in the case of Ouagadougou.

5.4 RIO DE JANEIRO
Governance, Participation and street markets. The path towards an Urban Food Policy[93]

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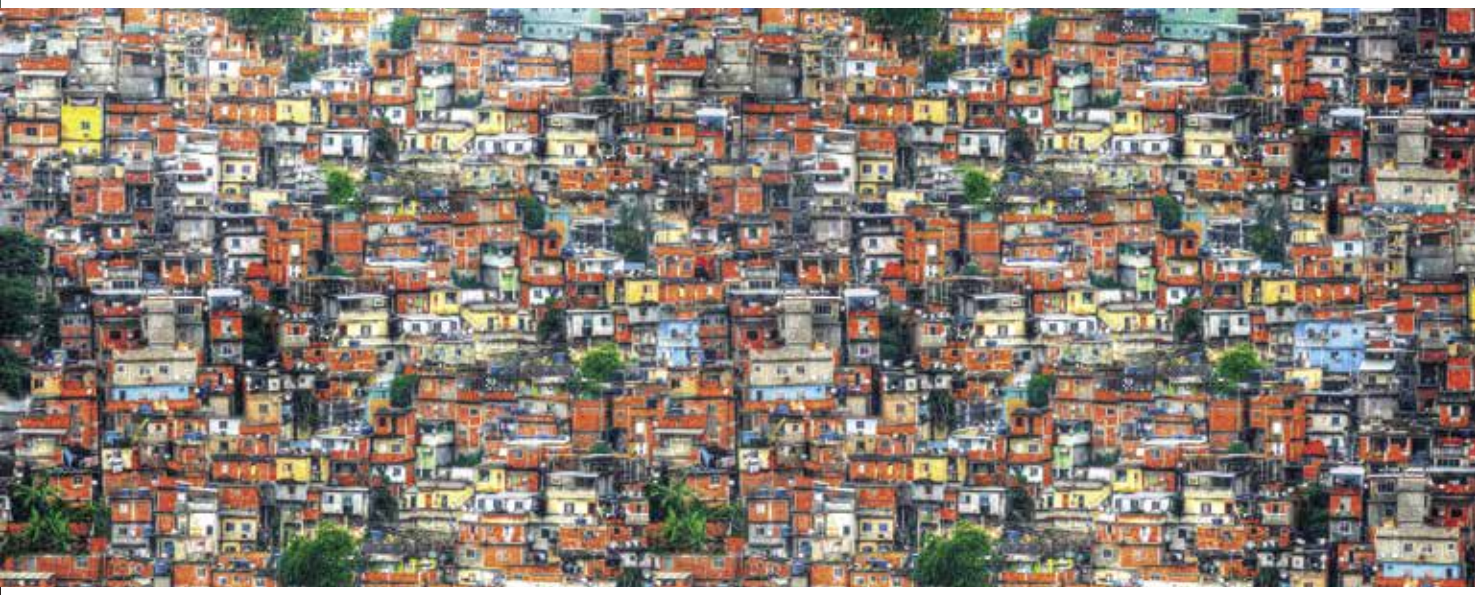


Rio de Janeiro is a complex city with complex challenges as regards urban food systems, a city within a rain forest with land struggles, legislative challenges and ongoing governance lessons. On the other hand, it is a city of opportunities. With its exuberant, natural capital, it is a growing city with a strong presence of public institutions and provides a case study thanks to the importance and strength of its social movements and civil society institutions. These aspects will have to support its approach towards urban food systems. The focus on governance structures within solidarity economy strategies may be a starting point to encourage a positive shift towards sustainable, healthy, urban food, which will be fair and inclusive, participatory and effective. The global agenda and the MUFFP are directly affected by those measures with local actions pointing towards global impacts.

1. Rio de Janeiro: an Urban Food Reality

Situated between two of the largest urban forests in the world, the small mainly self-supporting family farms in Rio de Janeiro date back to colonial times. However, urbanisation slowly pushed their lands to the outskirts of the city and exploitation of the territory for coffee production led to serious deforestation during the 18th and 19th centuries. Due to a drought in 1844, the consequence of a coffee monoculture and land exploitation, the emperor Pedro II decided to re-establish public ownership of this land and reforest what is today one of the biggest urban forests in the world – the Tijuca forest.

A look at urban food policies and current and possible future projects has to focus on the city's main challenges and opportunities. A case study of Rio is essential in an urban analysis, because of its unique, natural, social and cultural capital and political scene. Below we point out some of the irreversible aspects to be taken into consideration when approaching urban food systems or possibilities, which support the lenses chosen to understand and select what to include in this study.

Challenges

Rio's land is divided between urban development and the conservation and protection of areas of rainforest, agriculture and industries. Land conflict does not support food production and its visibility, if we also bear in mind that the involvement of local government in urban food policies has not been consistent. Although it has been revised every 10 years since 2001, the city's Master Plan focuses exclusively on the urban territory and ignores food production areas, even though the[94] state government institute for rural development (EMATER) has mapped 1008 active farmers in the city of Rio and the local[95] government has sponsored a food gardening project ("Hortas Cariocas"). The absence of a municipal department to support agriculture and food supply, the lack of major, local, governmental funds for agriculture–a deterrent to increasing food production–and more expensive tax rates for farmers than for urban property all hamper several executive and administrative actions and have an economic and territorial impact on urban farmers.

Moreover, social challenges are high: in 2010, Rio had a GINI coefficient of 0.62[96] and inequalities continued to increase. Any urban overview or strategy must consider and act towards reducing those inequalities. The lack of structured, coherent, local policies on food security and supply reinforces the impact of high inequality and poverty in the city.

The struggles over land use are increased if we add the pressure on real estate and the parallel power dominance of the *milicias* to the original players, as most farms are located in the less urbanised outskirts of the city and often in irregular settlements.[97]

All these challenges are highlighted by the decreasing role of small farming in urban dynamics, when the raw, economic impact is measured as a contribution to the GDP. The intrinsic value to small farming can be observed, however, in local contexts from a circular, systemic, economic, social, cultural and environmental perspective by the impact on the communities.

Opportunities

Rio has several opportunities (cultural, territorial, governance) to become a benchmark in sustainable food systems in the South. As a city within a rainforest with traditional communities and practices, it has a major, cultural and environmental opportunity not only to protect the ecosystem, but also to produce local food. As this is a mixed territory, there is an opportunity for small plot production with high biodiversity to reduce the footprint for everyday products. From a governance perspective, Rio's adherence to the Milan Urban Food Policy Pact (MUFPP) is led by the Municipal Department of Development, Work and Innovation (SMDEI) and the International Relations municipal office. These inter-sectoral actions provide a more integrated, systemic perspective. There is also a large, long-standing, traditional network of fresh

food street markets, which help to maintain and foster these market practices.

However, the biggest opportunity in Rio lies in its people. Strong, active social movements and local associations are leaders in promoting sustainable food production. They not only support food production and places of commercialisation, such as street markets, but also participate with strong bottom-up pressure on its governance, which is the basis for the foundation of the Municipal Council of Food and Nutrition Security in Rio (CONSEA-Rio) and the Municipal Council of Rural Development (CMDR).

2. Solidarity Economy and Social movements in challenging contexts

In Rio's unequal context, it is important to address food systems by looking at sovereignty, social development and empowerment, by giving access to land and ensuring sustainable, healthy diets. However, only 33% of the officially known farmers have the necessary authorisation to sell their products to public institutions.[98] At the same time, a study from 2011 states that 94% of Rio's farmers did not receive any federal funding during that year, due to legislation and bureaucracy.[99]

In Rio, there are two main approaches to address social development, economic growth and environmental sustainability together: to develop solidarity economy[100] policies (e.g.: the Municipal Plan for Solidarity Economy), to recognise and support social movements and civil society organisations as disruptive, yet fundamental players in Food Systems, and to empower their initiatives.

In this paper, we highlight the re-activation of the Municipal Council for Rural Development and the Organic Farmers Municipal Circuit as strategic and structural measures to begin to address the MUFPP in the challenging context of Rio–by developing

and integrating bottom-up initiatives with top-down support, and supporting markets and civil society initiatives. However, we are clearly aware of the need for further local government action to fully address the MUFPP, e.g., by co-designing and structuring a Food Security Plan for the city.

a) Participatory Governance on Urban Food: The Municipal Council of Rural Development (CMDR)

Since 2000, CMDR has been responsible for providing guidelines not only for public policies of sustainable, inclusive, rural development and support, but also for municipal council initiatives and public policies, focused on urban food supply from a perspective of united, sustainable development. The council has not met in recent years, and has become an empty, yet potential space, in which to debate and coordinate agrarian matters within the city.

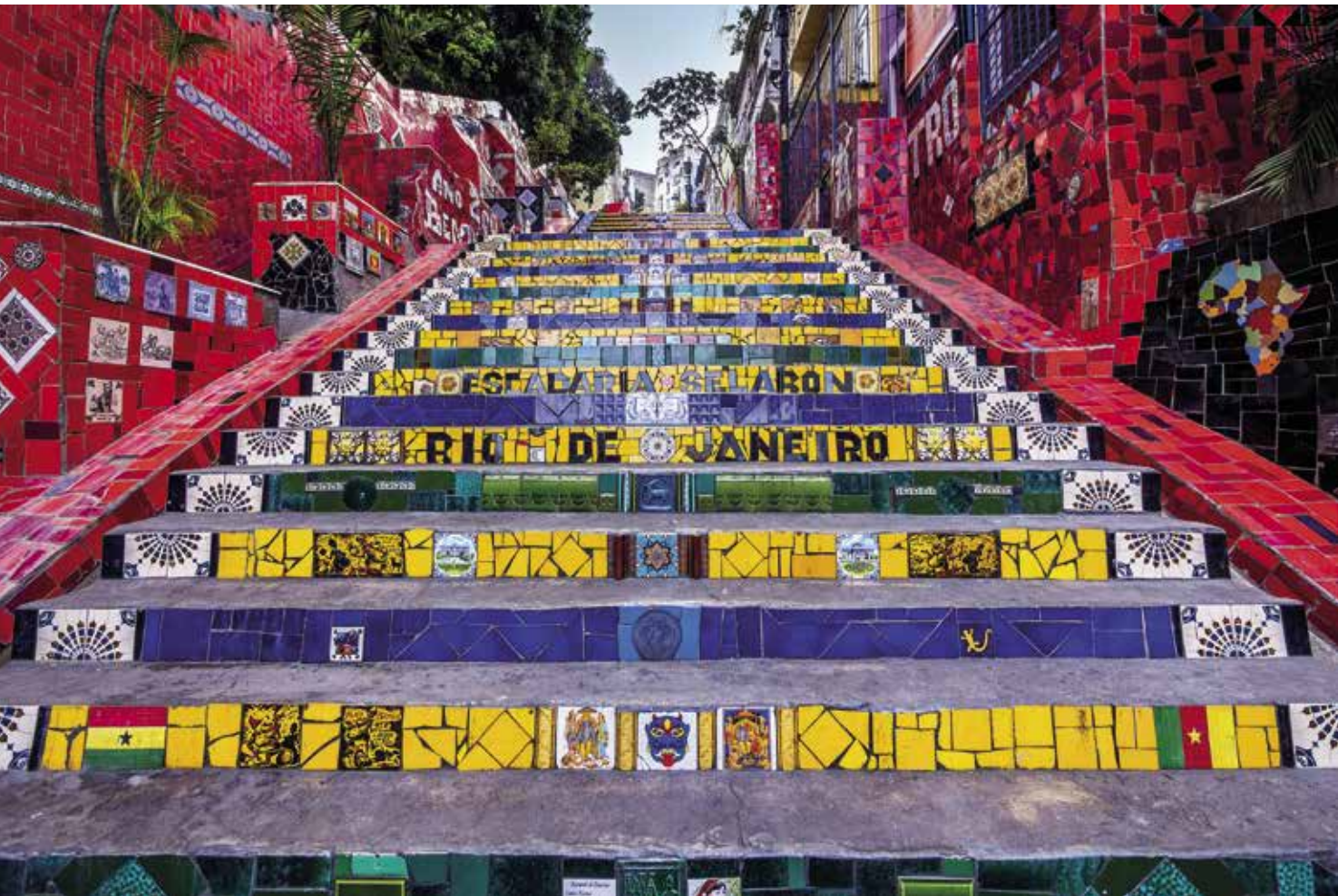
The social movements of urban farming, especially the Urban Farming Carioca Network (Rede CAU), a network of 24 collective farms and many producers, together with CONSEA-Rio applied pressure to re-activate the Rural Development Council in the city. SMDEI supported and coordinated this re-birth with a new configuration, members and purposes.

As a result, the 1st Municipal Conference on Agricultural Policies was organised in June 2018. This comprehensive conference consisted of 4 preparatory meetings in different neighbourhoods, covering the different regions and their priorities. The conference set out the main guidelines for the scope of the Council and the basis for Rio's First Municipal Plan on Urban Agriculture, to be developed according to the 4 main guidelines:

a) Healthy food consumption, commercialisation and productive chain of urban agriculture

b) Institutional dimension of municipal public policy and the dimension of agriculture within the urban perimeter

c) Political organisation, technical assistance and



skills building for production and processing
d) Solidarity economy and employment.
However, despite the importance and symbolic meaning of re-activating the Council as a proactive agenda on urban food policies, there are challenges to be addressed first, to enable the success of its work and intentions to be added to Rio's main challenges on food production mentioned above.
Together with the existing quarrel over land use and rights, large-scale projects such as the Olympics, with its vast infrastructure of mobility and urban services, put pressure on the territory for other uses. To tackle land rights, the Council must address the inclusion of ecological and economic zoning in urban projects and policies, and prioritise sustainable uses for the territory.
Another challenge consists of effectively implementing the Council's targets: after more than 10 years, CONSEA-Rio still has not succeeded in convincing Rio's government of the need to draft a comprehensive Municipal Policy on Food and Nutritional Security. The Municipality shows little interest in the topic and, therefore, the re-activation of the Council does not guarantee the implementation of an urban food policy i.e. having a council does not guarantee you have a policy.
All these difficulties are reinforced by the fragile, urban food system in Rio. With farming and food production structured mainly in small plots, led by families, which often have parallel activities to support their own livelihoods, together with low investment and scarce technical support for farmers, a lack of technical assistance, a lack of agrarian reform with a distribution of non-productive lands and low rural infrastructure[101] all lead to a fragile food production system without any strategic approach.

b) Organic Farmers Market Circuit: partnership with social movements and guaranteed access to local, organic produce in the urban area

Historically, food was sold in the streets of Rio by travelling stall-holders and women of African slave descent called "quitandeiras", in kiosks - the "kitandas" or African markets, similar to Arab markets. Urban sanitation refurbishments were made within large-scale urban projects according to European standards when Rio de Janeiro became independent in 1822. In 1904, the first farmers' market was created to mirror the European patterns of beauty, discipline and hygiene and with the idea of restraining peddlers. From then on, fresh food street markets[102]–not quite the same as farmers' markets– became a tradition in the streets of Rio.
The first organic farmers' market of the city was held in the neighbourhood of Gloria in 1995, led by ABIO (Association of Organic Farmers of Rio). In 2007, ABIO[103] organised an Internal Seminar, to look for solutions to support the local farmers selling their products. Two years later, together with the Municipality of Rio, it created the Organic Farmers Market Municipal Circuit. In 2010, the Organic Market of Bairro Peixoto was launched in Copacabana, kicking off as the first organic street market of the circuit.
In 2012, the Organic Farmers Markets was officially institutionalised with the publication of Municipal Decree No. 35064 of 25 January 2012, following in the wake of the National Law No. 10.831 of 23 December 2003, which regulates organic farming in Brazil.

The circuit has a management council, which decides on the objectives, results, schedules, evaluation criteria and decisions to launch new markets. The council has seats for the Ministry of Agriculture, for the Department of Public Order (responsible for freeing the use of public spaces), the Department of Development, Work and Innovation, together with the social institutions responsible for holding the markets and farmers' representatives. The circuit follows a set of guidelines, commonly agreed and established by the decree and its internal regulation, in order to guarantee its continuity, the participation and achievement of each stakeholder's interest and to monitor the results. It is mandatory to guarantee each market has a minimum of 10% of farmers from the municipality of Rio, with the remainder from the state of Rio, which supports short supply chains and local empowerment. Over the last 8 years, the circuit has grown continuously and expanded to a total of 19 street markets in public places in 16 neighbourhoods on a weekly basis.

Public departments and civil society have integrated to create 4 different NGOs[104] to manage the circuit. The Municipality's main role is to facilitate and permit the markets to be held in public spaces and to support close communication with farmers and the NGOs. By selling mainly fresh products, the circuit strengthens and supports sustainable, small-scale, small footprint farming from all over the state of Rio, and brings healthy, local food to the urban area, from farm to table with fair prices and available on a regular basis. It is a major example in integrated and participatory governance of urban food initiatives, and shows the circuit as a place where the possibilities of integrated development of markets for local food production and access can be tested.

Furthermore, the circuit is one of the most important initiatives to provide access to healthy food[105], by supporting agro-ecological production and simultaneously guaranteeing sales for local farmers. Sustainability is always linked to health and accessibility, built from a bottom-up initiative and supported by the local authorities, in order to support locally produced organic and fair trade products, within a solidarity economy, while occupying public spaces and helping urban life to reinforce the sovereignty and wealth of the rural families.

Challenges:

The circuit shows best practice in the way it structures partnerships with municipal support to grassroots movements. However, there are challenges to be addressed within the Circuit, such as its ability to be replicated and scaled up and its resilience. It is located in a small portion of the city and does not include a group of other agro-ecological and organic street markets, which are also managed, structured and organised by civil society movements and institutions,[106] but which do not have similar support from the Municipality. In addition, the circuit is institutionalised by an executive decree, as yet a fragile legislative tool and sensitive to the political interests of the Municipality in charge. We have yet to turn the legal basis of the circuit into a law, to provide more stability for the programme and ensure its resilience.

3. Contributions for the 2030 global agenda (SDGs) and the MUFFP framework for action

Both initiatives (CMDR and the organic market circuit) have impacts on several SDGs in the global

MUFFP framework for action	SDG	Actions
Governance Facilitates policy alignment across sectors Enhances stakeholder participation Identifies , maps and evaluates local initiatives Develops or improves multi-sectoral information systems (accountability	**SDG 16. Peace, Justice and Strong Institutions**	**MUFFP:** collaborative management of MUFFP implementation; **Municipal Council on Rural Development:** development of a participatory process in the re-activation of the Municipal Council on Rural Development; **Organic Farmers' Market:** creation of a Management Council for the Organic Farmers Market Circuit with the participation of different stakeholders

SUSTAINABLE DIETS AND NUTRITION Promotes sustainable diets (healthy, safe, culturally appropriate, environmentally friendly and rights-based),	**SDG 2. Zero Hunger** **SDG 3. Good Health and Well Being**	**Organic Farmers' Market:** Support and institutionalisation of the Circuit, allowing frequent, regular urban access to fresh, organic fair trade, small farmers' products in urban areas.
SOCIAL AND ECONOMIC EQUITY Encourages and support social and solidarity economy activities Promotes networks and supports grass roots activities (community gardens, community kitchens)	**SDG 1. No Poverty** **SDG 8. Decent Employment and Economic Growth** **SDG 10. Reduced Inequalities**	Solidarity Economy as a main strategy for economic development: reflected in the Creation of the Municipal Solidarity economy plan, including in it urban food chains and support to the Organic Farmers Market Circuit. Also, the support of the organic farmers market circuit, led and started by civil society organisations
FOOD PRODUCTION Promotes and strengthens urban and peri-urban food production and processing Seeks coherence between the city and nearby rural food production Supports short-supply chain	**SDG 11. Sustainable Cities and Communities** **SDG 12. Responsible Production and Consumption**	**Organic Farmers' Market:** the circuit impacts and supports a short supply chain by bringing opportunities for consumers to purchase products from farmers of the city and the state of Rio **Municipal Council on Rural Development:** The goal of the pre-conferences and the final conference is to support the development of an urban farming plan and policy, which links and supports urban farming, shortens the supply chain and promotes both production and processing
FOOD SUPPLY AND DISTRIBUTION Improves and expands support for infrastructure related to market systems	**SDG 8. Decent Employment and Economic Growth** **SDG 11. Sustainable Cities and Communities**	**Organic Farmers' Market:** The Municipality not only facilitates the circuit and its infrastructure, it also permits the use of public spaces. The Management Council includes representatives from Departments of Public Order, which help guarantee the necessary means for urban street markets.

agenda and help to implement the MUFFP framework of action. The table below shows the impacts already in place, and compares the initiatives, their SDG impact and the MUFPP framework for action to help an understanding of how those actions and impacts are correlated and support each other.

4. Conclusions and Recommendations

Rio de Janeiro is moving towards sustainable, urban food policies. The approach supports participatory governance tools, actions and projects, and facilitates the alignment of multi-sectoral policies and interaction between multiple municipal departments.

The city predicts the development of its first Urban Agriculture Plan, seen from a solidarity economy perspective, to separate economic development and unsustainable practices and support sustainable, healthy and empowering food systems. In order to improve those policies and overcome the challenges in governance, legislation and empowerment, we need to focus on a few points.

Governance

By recognising their role as major stakeholders, civil society movements and public institutions can take part in developing a collaborative and empowered approach towards urban food systems and in designing an Urban Agriculture Plan. The ongoing work of the Municipal Council of Rural Development must be incentivised and continually reinforced. Once it has achieved results, those achievements and best practices can be shared with other cities in the state of Rio de Janeiro. This will increase the scale and impact within the largest possible sphere to support and inspire the creation of a state, urban food network.

Legislation

It is important to have legislative support to facilitate a sustainable urban food system. This can already be achieved by including food systems in local Urban Planning tools and Plans, such as the Master Plan and the Municipal Law on Land Use. This will prove an important urban variable for mapping and planning growth and development. To support urban food, it is also important to simplify and adjust tax law for farmers and their plots and to also support them with basic infrastructures and access to information on their rights and duties.

In the specific context of Rio, land rights must be ensured and supported for traditional populations, for their valuable contribution to urban food production and natural capital conservation. This can be done by means of legislation on land ownership, and by monitoring and,

developing comprehensive and inclusive urban planning tools. The traditional practices of cultural and immaterial heritage must be recognised, and their major role will be guaranteed by helping existing sustainable practices become role models for other cities.

Support to Civil Society Movements and Organizations

The success story of the Organic Farmers Markets Circuit has taught us that in order to implement similar projects with other civil society organisations and grass root movements, such as the MST (movement of the landless), MPA (movement of the small farmers) and the fisherman communities of Rio, it is possible to support local practices of food production, which protect natural capital and empower vulnerable groups. Furthermore, the recognition of existing practices and street markets as immaterial protected heritage helps establish their urban role and ensure their presence.

In Rio, women play a fundamental role in the overall food system. However, they struggle for recognition as role players. The recognition and valuing of women in the overall chain of food production, distribution, processing and trading via projects, policies and incentives is, therefore, very important for gender empowerment and the support of livelihood resilience. Existing projects, such as the "quintais produtivos", are responsible for ensuring food security and local, sustainable, small scale development, led exclusively by women should receive support.[107]

In the consolidated urban fabric, the support and encouragement of citizens to use public spaces for local, urban farming initiatives, with open calls to occupy different neighbourhoods will ensure the concept of urban food and its role in the city and people's wellbeing can be replicated and the entire population can be involved.

NOTES

[893] This paper and its content was debated and has the contribution of the Municipal Council of Food and Nutrition Security (CONSEA-Rio), representatives of the Municipal Secretariat of Development, Work and Innovation (SMDEI), Rede CAU and ASPTA. We are thankful for the engagement and the support.

[94] http://prefeitura.rio/web/compur/plano-diretor

[95] Emater (2017) : relatório por municípios do sistema aspa/agrogeo - ano 2017. rio de janeiroAvailable at. http://www.emater.rj.gov.br/images/munic2017.htm

[96] http://www.atlasbrasil.org.br/2013/en/perfil_m/rio-de-janeiro_rj

[97] The hygienist trend from post colonial Rio can still be observed today. The Urban Secretariat proposed a Urban Structuring Plan for the Vargens area in the West Zone of the city indicating the complete removal of agricultural areas to giving place to residential and commercial highly urbanized spaces. As a response, the local communities together with Rede CAU prepared a counter proposal on the future land use, called Popular Plan for the Vargens area. The plan shows a series of actions that respect the social and cultural diversity of the area, and its agroecological potential.

[98] DFDA-RJ/SEAD (2018) : Delgacia Federal do Desenvolvimento Agrário no Estado do Rio de Janeiro, da Secretaria Especial de Agricultura Familiar e do Desenvolvimento Agrário, da Casa Civil, da Presidência da República (DFDA-RJ/SEAD/PR) - A situação da Agricultura e do Meio Rural do RJ e a política agrária. Contribution to the first Municipal Conference of Agrarian Policy and Rural Development of the city of Rio de Janeiro. May, 2018

[99] Souza P.M., Fornazier, A., Ponciano, N. J.,Ney, M. G. (2011)Agricultura Familiar Versus Agricultura Não Familiar: uma Análise das Diferenças nos Financiamentos Concedidos no Período de 1999 a 2009. Revista Econômica do Nordeste (REN) 42, (1)

[100] Recognizing solidarity economy as "social and politically a part of a new model of sustainable, solidary and democratic development, as well as the practice of fair trade markets in various production chains in the city", a series of projects and actions have been designed in complementary and interdependent ways, proposing a new glance over the value chain, focusing on supporting commercial networks, facilitating access, and consolidating the city as a Fair Trade Town. See also: Condesol (2018): Plano Municipal de Economia Solidária, 2018. Secretaria de Desenvolvimento, Emprego e Inovação - Prefeitura do Rio. Conselho Municipal de Economia Solidária –.

[101] Accordingly to Bernardete, representative of Rede CAU - Rio's network of Urban Agriculture, one of the biggest difficulties for urban farmers in Rio is the lack of basic infrastructure on their land, as of sewage, electricity or tapped water.

[102] Jesus (2005) : ordenando o espaço público : a criação das feiras livres.

[103] Launched in 1985, ABIO is the association of organic farmers for the state of Rio de Janeiro. Their main role is to support organic farming mainly through participatory certification (SPG) processes and support on the commercialization of organic farmers products through the coordination of street markets. See also: http://abiorj.org/atuacao/

[104] ABIO, Essência Vital, AS-PTA e AULA

[105] The institutionalization of the Circuit and its recognized success, led to the development of a state law project to implement a state policy of support and encouragement of organic street markets in the state of Rio de Janeiro - Law Project No 1814/2016.

[106] Rede CAU manages and coordinates 12 markets in Rio, in different neighborhoods, with the first dating back to 1997.

[107] Lousada K - Fiocruz Mata Atlântica integra Semana da Alimentação Carioca. 24/10/2017. Available at: https://agencia.fiocruz.br/fiocruz-mata-atlantica-integra-semana-da-alimentacao-carioca . accessed in 20.09.2018

5.5 SEOUL
The Seoul Eco Public Plate Project (SEPP)

Eunsook Moon, Seoul Food Citizen Council, Consumer Policy Institute

"Let's transform Seoul into a city that provides healthy and affordable foods, and that recognizes the value of a direct connection between urban and rural areas, making Seoul a city in which consumers and producers share together." In 2011 Seoul City (Seoul Metropolitan government) launched a large transition project to transform all public meals into eco meals.

What is it all about?

The project started by changing school meals into 'eco meals', using eco-products with the long-term goal of turning all public meals into 'eco meals' in a staged manner. Eco school meals are provided free to all students in middle and elementary schools in accordance with Seoul's public food policy.

It aims at connecting Seoul with smallholder producers in rural areas through an approach of 'public procurement based on connecting urban and rural areas', and at turning traditional rural areas into eco farming areas by promoting eco-friendly consumption through the Seoul Eco Public Plate Project (SEPP).

Seoul City invested a total of USD 2.506 billion in the project over five years (2011~2016) and will be spending an additional USD 0.12 billion on it up to 2020. In 2015, the total budget for free eco school meals amounted to USD 1.76 billion.

Seoul City analyzed the impacts of eco school meals in the first stage of the SEPP, which covered 5 years. Based on the results, Seoul City convinced the City Council and citizens of the utility of the project and succeeded in securing the budget for the public procurement system, which is the foundation for the transition to eco public meals.

Phase 1 project: Implemented Free Eco school meal project to secure children's right to good food. (The Seoul Free Eco School Meal Project)

The Seoul Free Eco School Meal Project was initiated with the aim of providing free healthy food to students at mandatory educational institutions such as primary and middle schools, and to some underprivileged high school students from low-income families. The Free Eco School Meal Project was launched in 2011 and accomplished its goal of providing eco meals to all students at primary and middle schools in Seoul in 2015. Approximately 705,000 students are being provided with free eco meals in 940 schools, including 559 public primary schools and public and private middle schools (as of 2015). Seoul is planning to expand the free eco school meal project to cover high schools as well. Currently, Seoul is financially supporting eco meals in 115 high schools.

Phase 2 project: Laid foundation for the Eco Public Plate Project by building a public procurement system based on connecting urban and rural areas. (The Seoul Procurement for Urban-rural Coexistence Project)

Seoul became a member of the Milan Urban Food Policy Pact and started to build a 'public procurement system based on connecting urban and rural areas' with the aim of expanding provision of eco products in all "public plate" programs starting in 2015. Seoul improved the public plate distribution system, which had previously consisted of 5 to 7 stages, establishing a direct connection between Seoul and producers in rural areas. In this manner, Seoul is aiming at transitioning to a sustainable food procurement system. Seoul City collected various opinions on the plan of a public procurement system based on connecting urban and rural areas from March 2016 to April 2017.

Phase 3 project: Launched a pilot project for Eco Public Plate project through a public procurement system based on connecting urban and rural area. (The Seoul Eco Public Plate Project)

In 2017, Seoul initiated a pilot project featuring a connection between Gangdong-gu, a local government in Seoul with a population of 440,000 and 2,500 smallholder producers of Wanju-gun, Jeollabukdo province.[108] Through this project, Seoul took a first step toward implementing the Eco Public Plate Project where all "public plate" meals are to be converted into "eco meals". The project allows for the provision of selected quality products in cases of lack of eco product ingredients in certain areas. The project involves many different social enterprises and cooperatives in Seoul. Seoul is planning to expand the pilot project to encompass 4 local governments in Seoul, and 4 rural areas with smallholder producers within this year.

Aims

The project aims at raising the share of eco product

provision to 70% from the current level of 20-40% in the public plate (including children's day care centers, welfare facilities, community child care centers). Specific goals are set to raise the share of eco produce provision to 40% in 2017, to 55% in 2018, and to 70% in 2019. The plan foresees the completion of the Eco Public Plate project, based on connecting urban and rural areas by 2020 to cover all public plate services in Seoul (a total of 7,338 places, with 299,526 people as of 2016).

Why Seoul started the project

Seoul, as the capital city of the Republic of Korea, launched the Eco Public Plate project through a public procurement system based on connecting urban and rural areas in recognition of its duty of care and responsibility. Seoul, fully committed to the principles of social responsibility, has developed a model for synergy between urban and rural areas.

- **For the socio-economically vulnerable**
  Seoul City aims to protect citizens' health and quality of life by securing the basic right to food of the socio-economically vulnerable population groups, and by reducing gaps in food provision in Seoul, providing healthy food to the socio-economically vulnerable population as a priority group. A major element is the protection of citizens from unhealthy foods including GMO food, imported products with "no face" (i.e. with no adequate and correct labelling), chemical food additives and others.
- **For smallholders and family farmers**
  Seoul City recognizes its duty to support smallholder producers and family farms in particular, and rural areas in general, through its "economic boost policy". Seoul has a social responsibility (SR) to reduce the sufferings of smallholder producers and family farms who

are seriously affected by the current social and economic crises. Rural areas are suffering from a number of difficulties, including the problem of finding markets for products, lowered productivity due to the rapid ageing of the population in rural areas, and other stressors. Seoul City is aiming at making a breakthrough in solving these complex problems by boosting interchange between urban and rural areas, and by helping smallholder producers to find economic resources through stable provision of products to the urban public plate.

- **For extension of food as a public good**
  Seoul City promotes the notion of the public good nature of food in Seoul by involving many different stakeholders, including citizens, farmers, social enterprises, consumers' cooperatives, community businesses, and local government as partners, to avoid reliance on food market dominated by a few large companies.
- **For ecological resilience**
  Seoul City commits to recovering the ecological resilience of Korea and to contributing to global low-carbon green growth.

Key lessons

The Seoul Mayor responded to citizens' eager expectations for healthy and affordable food by initiating the "eco school meal" project.

In 2011, the newly elected Mayor of Seoul declared: "Your worries are reduced with the free eco school meal. You can count on the 'free eco

school meal'." Seoul City enhanced the quality of school meals by transforming them into such 'eco meals' by providing eco products through public procurement. Seoul adequately addressed parents' expectations of "the best food for our children" through a comprehensive school meal program. As a result, Seoul reduced parents' concerns and worries about the quality and safety of school meals, and in addition, lowered the economic burden on parents. Accordingly, the quality of school meals was enhanced substantially, and the production of "eco products" was increased in Korea.

The project succeeded in increasing experimental interdepartmental and cross-sectoral cooperation.

Seoul City could proceed with a food policy resulting in effective outcomes through an interdepartmental cooperation system.

A variety of divisions in Seoul city government participated in the "eco school meal projects" to accomplish multiple goals of education, welfare, health promotion for all students, connections between urban and rural areas, and more. The following are the participating divisions: Lifelong Education Division, Citizens Health division, Welfare Office, Women and Family Policy Division, Green City Division, Planning and Coordination Division.

In implementing the project, a public procurement system, based on linking urban and rural areas as a foundation of the "eco public plate" project, was established.

Seoul City established a public procurement system connecting public plate facilities in Seoul with smallholder producers in rural areas. In line with the project, an "Eco Distribution Center" (covering the entire area of Seoul) and a "Public Food Support Center" (covering boroughs in Seoul City) were established to build an eco-procurement system for the "public plate".

The "free eco school meal" project had beneficial social and economic impacts in Seoul City.

Household economies benefited from the project, due to the reduced costs borne by parents, and social and economic gaps were reduced by the income redistribution and poverty mitigation resulting from the "free school meals" project. An analysis showed that positive economic effects were observed. These included "production enhancement effect", a "value-added induction effect", employment creation, job enhancement and more. The Free school meal project also had a significant impact of eliminating the 'stigma effect of selected school meal'.

Seoul City supported the synergy between urban and rural areas by connecting consumers with both rural and urban producers, and by connecting urban and rural areas.

The project also contributed to an exchange between consumers and producers, between-urban and rural areas, between different generations (for example, cultural cycle and connection between the elderly in rural areas and young people in urban areas.) A survey showed that citizens in the city found their understanding of rural areas enhanced.

Seoul City established a governance system to link the private and public sectors through the project.

Opinion gathering among stakeholders was conducted through a total of 108 meetings. The Eco free meal support evaluation committee is in charge of the evaluation and oversight of the "eco public plate policy" according to the ordinance of city.

The committee consists of representatives of Seoul City (Vice-Mayor of Administration Part 1 and Director of the School Meal Division), the Education Agency, the City Council (council members), the Association of Mayors of local government, the Association of Nutritionists, parents' groups, teachers' groups, eco producers groups, school meal experts, civil society groups, and others. The committee is being run successfully. Seoul is planning to organize a public food policy committee consisting of 18 members.

5.6 SYDNEY
Addressing the SDGs in Cities through Food Business Incubation: FoodLab Sydney

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This case study outlines FoodLab Sydney, an innovative food business incubator that aims to address food insecurity in the City of Sydney and its connections to the UN's Sustainable Development Goals. Developed by the University of Sydney's Sydney Environment Institute (SEI) and the University of New South Wales Canberra, the project is a first-of-its-kind for the city and is a collaborative effort aimed at tackling the complex causes of food insecurity involving federal, state and local governments. Approximately 17,000 residents in the City of Sydney are food insecure, according to the City of Sydney's Community Wellbeing Survey, with the number projected to rise, and inequality grows in the City. The project will foster the development of food-based start-up businesses, providing education and training for people who are disadvantaged to develop sustainable social enterprises, as well as working to develop a network of businesses that increase the wider community's access to healthy and affordable food.

Introduction

Food insecurity in Australia's major cities is on the rise[109], and in 2016 the City of Sydney estimated that 8.5 per cent of the City's residents had run out of food at some time in the last year and were unable to buy more – over 19,000 people in the local government area (LGA) alone.[110] The City of Sydney's Community Strategic Plan identifies such food insecurity as a threat to social sustainability and resilience, and mandates the City formulate a response. Existing policy responses to the problem in Australia are failing food insecure populations and are unsustainable in the long term. The primary response, emergency food provision, is insufficient and inadequate for addressing the root causes of food insecurity. Programs provided by the charitable food sector are both precarious and variable.[111] Worse, such emergency food provision has never served more than a small minority of the total food insecure population[112, 113] and does not meet even the most basic and immediate needs of the small populations that it does serve.[114, 96]

Cities and partners around the globe have begun to look at more innovative policies and approaches that can work to address the deeper, systemic, and more complex causes of food insecurity, including the affordability and accessibility of fresh and nutritious food, social and economic disadvantage, rising inequality, and economic exclusion[115] One such innovation being increasingly trialled internationally are food business incubators, which assist new food business start-ups in vulnerable communities, build relationships and connections between businesses and their community, and catalyse broader change in food systems. The case study chapter charts the development of an innovative food business incubator in the City of Sydney, and its connection to the Sustainable Sydney 2030 strategy, which details Sydney's role in achieving the United Nations Sustainable Development Goals.

The experience of designing and implementing a food business incubator in the City of Sydney, which we discuss throughout, raises two key recommendations that have broader applicability across the globe as cities work to achieve Goal 2 by improving access to healthy and nutritious food.

1. Cities have particular scope to use economic development policies and programs to address the deeper, systemic, and more complex causes of food insecurity, including the affordability and accessibility of fresh and nutritious food, social and economic disadvantage, rising inequality, and economic exclusion. We are seeing a range of innovative policies and approaches in Australia that take this approach, including our work at FoodLab Sydney, but also many others such as Loaves and Fishes in Tasmania and Melbourne Food Hub.
2. The implementation of Goal 2 requires effective governance to support partnerships. This is evident in the FoodLab Sydney case study, where the project is designed as a collaborative research project that will generate learnings and benefits for all project partners, as well as the broader city community, along with broader global food justice networks. Shared responsibility for Zero Hunger and the broader SDGs is a key theme of the City of Sydney's City for All Social Sustainability Policy.

Food insecurity in the City of Sydney today

Food insecurity is defined by the UN Food and Agriculture Organisation (FAO) as "a situation that exists when people lack secure access to sufficient amounts of safe and nutritious food for normal growth and development and an active and healthy life."[116]

In the City of Sydney today, where there are abundantly stocked supermarkets and green grocers, food insecurity essentially relates to access and affordability for all.[117] According to recent social indicators research, food insecurity is a significant issue in the City of Sydney today, experienced by more than 17,000 residents (8.5%) – who had reportedly run out of food and been unable to afford to

buy more.[118] The scale of this issue is a stark indicator of levels of poverty and rising inequality in our prosperous city and the severe impacts on people's ability to afford the basic essentials of life to support their health and wellbeing. The ability to afford enough nutritious food to eat is a fundamental social justice issue. It is an indicator of market failure that points to an urgent need for market interventions.

In response to growing recognition of this issue, the City commissioned research by the UTS Institute for Sustainable Futures in 2015 (unpublished). This research investigated the cost of a typical fortnightly 'healthy food basket' – i.e., a grocery shop adequate to meet the nutritional needs of a range of household types (single; couple; family with children) from a range of supermarkets and other food retail outlets across the local area. The research showed significant

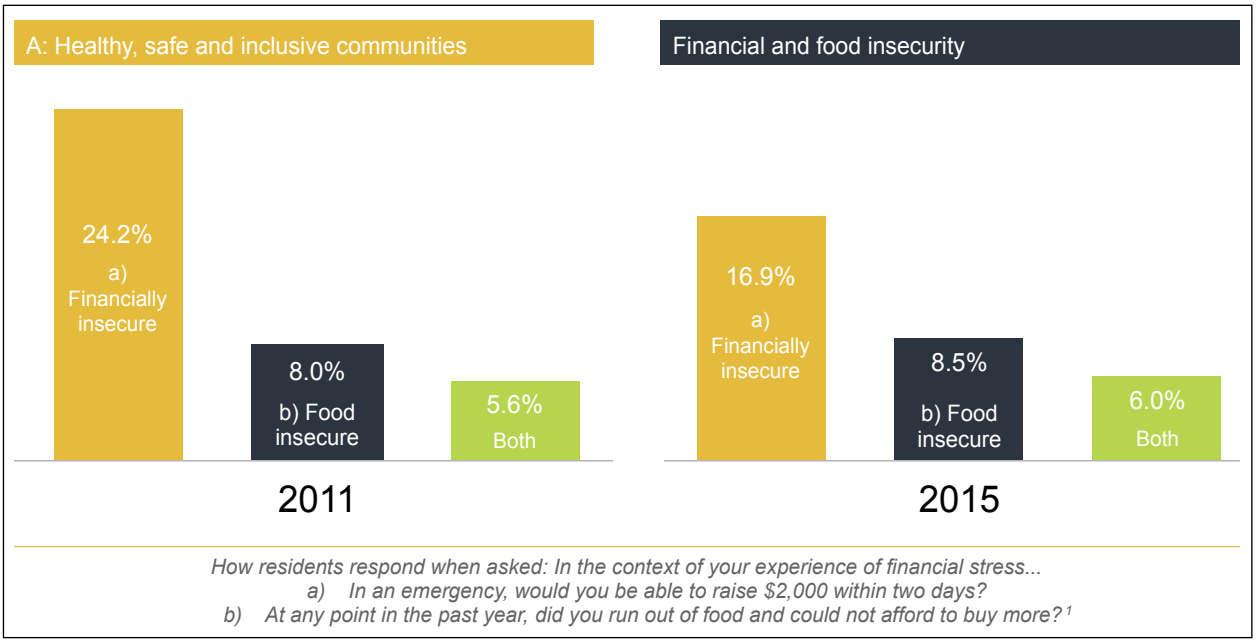

Figure 1: A growing problem: City of Sydney Community Wellbeing Indicators report extract, 2016

inequities in the affordability of food across the city and for different household types, with households with children and government-assisted households found most likely to be experiencing or approaching food stress.[119]

Currently, charities such as the Salvation Army, OzHarvest, FoodBank and others are picking up the tab of this market failure, providing free and subsidised food and food vouchers to those in need. But the scale of this problem indicates the urgent need for more strategic, collaborative multi-organisational responses to address food justice and associated broader equity goals in the city. And more broadly our research shows that food insecurity is a complex phenomenon, and has causes that are multiple and interacting. Solutions that respond to this complexity must engage with the many causes of the capability deprivation that drives food insecurity,[120] and work to counter the assumption that food insecurity is simply a matter of access to food.

FoodLab Sydney: A Solution on the Road to Zero Hunger

In searching for such a solution, we were inspired by one of first examples of a food business incuba-

tor, FoodLab Detroit. FoodLab Detroit, which has successfully incubated over 220 food processing and retail businesses, will serve as a partner and model for the work that we are doing in the City of Sydney. Detroit's local food system is one of the most cohesive entrepreneurial ecosystems in the U.S. From the smallest businesses born in private homes to the established firms, support to transform small-batch production to mass manufacturing is readily available.

In Detroit and in Sydney, the food business incubator model presents an intervention that achieves multiple objectives:

- Providing long-term, sustainable employment opportunities for vulnerable and low-income residents, with job creation and up-skilling seen as food security interventions.
- Connecting local producers, manufacturers, and retailers, facilitating the growth of Sydney's local food economy.
- Preserving existing and supporting new opportunities for local and regional urban and rural agriculture.
- Supporting local and regional food value chains and related infrastructure involved in the processing, packaging, and distribution of food.

The food business incubator model has now been implemented in numerous cities across the US as a social and economic development strategy targeted to benefit vulnerable and low-income communities through inclusion, access, and economic development. There exists a theoretical rationale for business incubation as community economic development, but the empirical evidence on food business incubators, though positive, remains largely anecdotal. Rigorous research is needed to develop new approaches and metrics to assist in assessing the impacts of a popular and growing method of community economic development. Given the growing interest in the model, as evidenced further below, the innovations that advanced the research involved alongside FoodLab Sydney will likely be of interest to cities and programme evaluators across the globe, as they begin to explore how to track the impact of interventions to achieve Zero Hunger.

The existing modest evidence bases suggest that food business incubators facilitate and enable entrepreneurship by reducing and removing barriers to establishment,[121] balancing decision-making, assisting in strategy, giving credibility to new enterprise, and connecting new enterprises in businesses networks.[122] The evidence also suggests that business incubators bring considerable job creation potential given the limited resources involved. In New South Wales, Australia, every twelfth program client in Settlement Service International's small business incubator for new migrants, the Ignite program, created a job in addition to their own self-employment.[123] In Detroit, members of FoodLab Detroit's broad food enterprise network employ about one percent of the city's total food workforce, with each enterprise employing on average 2.3 workers.[124] The for-profit incubator Wandering Cooks in Brisbane has supported over 100 food service businesses since opening in 2013[125]and in Vermont, USA, the Food Ventures Center assists around 35 new businesses each year, its total operations contributing nearly USD 8 million to the local .A new venture in Chicago—The Hatchery—has forecasted the creation of 'upwards of 150 jobs in year one, and 900 total by year five'.[126]
There is also good evidence for a range of positive social outcomes from incubator models. Most notably, they provide access to the labour market for those facing multiple barriers to participation through paid vocational education and training.[127]Globally, incubator models have secured high rates of employment for their participants: 100 percent at Hot Bread Kitchen and The Bread and Butter Project; 88 per cent at DC Central Kitchen;[128] and 80 per cent at STREAT. More generally, the evidence shows that involvement increases participants' social and professional networks, their self-efficacy, and their ability to

access social services. [129, 130]

Taken together, this preliminary evidence suggests that using a food business incubator to address the systemic determinants of food insecurity can contribute to achieving Goal 2. What is missing is evidence of the exact mechanisms through which these outcomes are achieved. This is the focus of the research we are conducting as part of FoodLab Sydney: the development of rigorous methods of research and evaluation to justify the impact, efficacy and potential of the incubator model. The delivery of this project will not only benefit our collaborating organisations by reducing food insecurity amongst citizens, but also by developing a rich understanding of how these benefits are achieved, in what time frame, and for whom. By doing so, the project will clarify current uncertainties in the research on food business incubators, as well as a much larger question in the evaluation literature[131]: how can we most effectively evaluate complex policy interventions? And, for the Milan Pact community, it will help us answer the related question: how can we understand the impact of food system change?

To summarise, current approaches to food insecurity tend to focus on satisfying immediate needs, which is crucial, but many do not get to the underlying causes of food insecurity. FoodLab Sydney is about bringing more people into the local food system, and providing them with the opportunities to create better lives for themselves and their communities – addressing rising inequality, economic injustice and social exclusion. The goal is to make Sydney a city for all, where progress is measured by community resilience and social justice – a city where no one goes hungry and all people have access to a reliable supply of affordable and nutritious food.

Relation of the Sydney policy with SDG goals and targets

The City of Sydney is deeply committed to the realization of the Sustainable Development Goals. The Community Strategic Plan sets out the City's aims to deliver integrated social, economic, cultural and environmental sustainability through its work across a range of areas. It represents the City's response to the United Nations' Sustainable Development Goals 2015, which provide a roadmap for a sustainable future globally. Goal 2 of the UN Global Goals is particularly pertinent to the City's actions to address food security: 'Zero Hunger.' Additionally, Goal 3: 'Good Health and Wellbeing,' and Goal 11: 'Sustainable Cities and Communities' provide a clear framework for the City's action.

More broadly, Sustainable Sydney 2030 is a vision for the sustainable development of the City to 2030 and beyond. It includes 10 strategic directions to guide the future of the City, as well as 10 targets against which to measure progress. FoodLab Sydney is aligned with the following Sustainable Sydney 2030 strategic directions and objectives:

Direction 1 – A Globally Competitive and Innovative City – The establishment of FoodLab Sydney will strengthen global connections, linking the City with cities around the world that are also developing this innovative model response to food insecurity and deeper structural issues of social and economic disadvantage. Addressing food insecurity as a critical manifestation of poverty and rising inequality in our city will bring longer-term benefits. There is strong evidence that cities taking action on relative inequality are more globally competitive and benefit from stronger economic growth in the long-term.

Direction 6 – Vibrant Local Communities and Economies – This project addresses food insecurity by increasing economic participation among residents who are disadvantaged. Socially, the model is designed to address social justice issues in the community, strengthen social connections, improve social inclusion and build community resilience.

Direction 10 – Implementation through Effective Governance and Partnerships – This project is designed as a collaborative research pilot project that will generate learnings and benefits for all project partners, as well as the broader city community, along with broader global food justice networks. Shared responsibility for social justice and resilience issues is a key theme of the City's City for All Social Sustainability Policy. The City's memorandum of understanding with the University of Sydney is a strong platform for the initiation of the project, which will also involve federal and state government and the not-for-profit sector - delivering a truly cross-agency collaboration, with the attendant governance and partnership benefits.

Relation of the Sydney policy with MUFPP framework for actions

This project connects across all six of the areas contained in the MUFPP framework for actions, but particularly in the areas of governance, social and

economic equity and food production, and notably the key actions below:

Governance: The project facilitates collaboration across city agencies and departments and seeks alignment of policies and programmes that impact the food system across multiple sectors and administrative levels, adopting and mainstreaming a rights-based approach.

Social and economic equity: The project aims to promote decent employment for all, including fair economic relations, fair wages and improved labour conditions within the food and agriculture sector, with the full inclusion of women.

Food production: The project will support short food chains, producer organisations, producer-to-consumer networks and platforms, and other market systems that integrate the social and economic infrastructure of the urban food system that links urban and rural areas.

It is the connections between these domains that gives FoodLab Sydney its power – recognizing that food insecurity is complex and systemic, and that our responses must work to affect change across the food system.

NOTES

[109] Temple, J. (2008). Severe and moderate forms of food insecurity in Australia: are they distinguishable? Australian Journal of Social Issues, 43(4), 649–668.

[110] City of Sydney Research. (2016). City of Sydney Community Wellbeing Indicators Report: City of Sydney.

[111] Lindberg, Rebecca, Whelan, Jillian, Lawrence, Mark, Gold, Lisa, & Friel, Sharon. (2015). Still serving hot soup? Two hundred years of a charitable food sector in Australia: a narrative review. Australian and New Zealand Journal of Public Health, 39(4), 358-365

[112] Lambie-Mumford, Hannah, & Dowler, Elizabeth. (2015). Hunger, Food Charity and Social Policy - Challenges Faced by the Emerging Evidence Base. Social Policy and Society, 14(3), 497-506.

[113] Loopstra, Rachel, & Tarasuk, Valerie. (2015). Food bank usage is a poor indicator of food insecurity: Insights from Canada. Social Policy and Society, 14(3), 443-455.

[114] Bazerghi, Chantelle, McKay, Fiona H., & Dunn, Matthew. (2016). The Role of Food Banks in Addressing Food Insecurity: A Systematic Review. Journal of Community Health, 41(4), 732-740.

[115] IPES-Food. (2017). What makes urban food policy happen? Insights from five case studies. International Panel of Experts on Sustainable Food Systems

[116] FAO (2008). An introduction to the basic concepts of food security. Food Security Information for Action. Practical Guides. Rome: FAO

[117] Food affordability is defined as the cost of food relative to a household's income. Food stress is defined as a situation whereby meeting the nutritional requirements of household members requires more than a third of household income.

[118] City of Sydney, 2016, Wellbeing Survey – reported in Community Wellbeing Indicators report; Q: *"At any point in the last year did you run out of food and could not afford to buy more?"*

[119] Costs of a 'healthy food basket' differ considerably across the City (e.g. $117 for young adult in the Macleay Street/ Woolloomooloo locality compared to $166 in the Oxford Street locality). Food stress is defined as a situation when a households' groceries cost more than 30% of gross household income.

[120] Craven, Luke K. (2017). System Effects: A Hybrid Methodology for Exploring the Determinants of Food In/Security. Annals of the American Association of Geographers, 107(5), 1011-1027.

[121] Colpaart, Ashley, Grahn, Wendy, & Seymour, Devon. (2017). Shared-use kitchens: a policy landscape report: The Food Corridor

[122] Lovgren, Adam. (2012). How can assistance programs create value for entrepreneurs? A grounded theory case study of the Michigan State University Product Center for Agriculture and Natural Resources. (Dissertation/Thesis), ProQuest Dissertations Publishing

[123] Collins, Jock. (2016). From refugee to entrepreneur in Sydney in less than three years. Sydney: University of Technology Sydney Business School

[124] Daniel, Jessica Ann. (2016). Foodlab Detroit: Good Food Enterprise in an urban food movement. (Dissertation/Thesis), ProQuest Dissertations Publishing

[125] Wandering Cooks. (n.d.). Our Makers. Retrieved 24 July, 2017, from http://wanderingcooks.com.au/local-food-sourcing-catering/

[126] The Hatchery. (n.d.). About us. Retrieved 26 July, 2017, from http://thehatcherychicago.org/about-us/

[127] Barraket, Jo. (2007). Pathways to employment for migrants and refugees? The case of social enterprise. Paper presented at the Australian Sociological Association (TASA) and the Sociological Association of Aotearoa New Zealand (SAANZ) Joint Conference, Auckland, New Zealand.

[128] DC Central Kitchen. (2016). We fight hunger differently DC Central Kitchen impact report: fiscal year 2016. Washington, DC: DC Central Kitchen

[129] Barraket, Jo, & Archer, Verity. (2010). Social Inclusion through Community Enterprise? Examining the available evidence. Third Sector Review, 16(1), 13-28.

[130] Barraket, Jo. (2007). Pathways to employment for migrants and refugees? The case of social enterprise. Paper presented at the Australian Sociological Association (TASA) and the Sociological Association of Aotearoa New Zealand (SAANZ) Joint Conference, Auckland, New Zealand.

[131] Hawe, Penelope. (2015). Lessons from Complex Interventions to Improve Health. Annual Review of Public Health, 36(1), 307-323.

5.7 TEL AVIV - YAFO
Addressing Responsible Consumption and Production (SDGs 12) via Interventions along the Food Chain

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Tel Aviv-Yafo and its suburbs form the largest and densest urban area in Israel, and is the heart of the country's business and economic sectors. As such, it is a major challenge to improve the food system to be more responsible and sustainable. Following a comprehensive mapping of this issue and its possible solutions, Tel Aviv-Yafo is currently tackling this problem at several key points along the food chain.
These intervention points include promoting urban agriculture, "Green Label" for food businesses, education activities, logistics, and waste management. In the near future, the urban food policy program will be cross-linked with the city's resilience program, via projects of sustainable and healthy neighborhoods and by implementing complementary economy tools such as complementary currency, community economies,crowdfunding, food cooperatives, and more. Tel Aviv-Yafo thus strongly promotes the responsible consumption and production of food in the city, learning from its own work and other cities' experience.

Tel Aviv-Yafo joined a group of leading global cities that signed the Milan Urban Food Policy Pact (MUFPP). MUFPP promotes healthy and sustainable food policies in its member cities. In 2016, Tel Aviv-Yafo started to formulate and implement a cross-organizational food program – **Bon Appetite**. This program is led by the Environmental authority in Tel Aviv-Yafo, which collaborates not only with counterpart municipal units, but also with professional organizations, including NGOs, academic institutions, and government officials.

The Bon Appetite program is focused on creating solutions to improve the health of the residents, and to promote sustainability all around the city. Here we will describe the main steps Tel Aviv-Yafo has taken to promote responsible consumption and production of food.

Urban Agriculture

In the heart of the city, on the roof of the first and most prestigious shopping mall in Tel Aviv-Yafo, there lies an agricultural farm. Using hydroponic advanced methods, they are growing green leaves, herbs and vegetables, which are being used in restaurants in the shopping mall and its vicinity. In addition, another farm is now being constructed in a neighborhood with low socioeconomic status, in order to provide not only produce but also education and social activities to the tenants. Tel Aviv-Yafo strongly believes that even in a very dense city, it is possible to find large roofs and open areas that can be used to grow fresh produce locally, thus saving transportation time and emissions from out-of-town rural farms. Having a challenging air pollution situation in Tel Aviv-Yafo, which is caused to a large degree by transportation emissions, it is paramount to reduce the number of trucks that enter the city – and the urban agriculture initiatives have the potential to contribute substantially to this goal.

In addition, many community gardens have opened

in Tel Aviv-Yafo over the last two decades. Although their primary goal is to promote community life, they also provide local food on a small scale to participating residents – thus further reducing the need for supply trucks to enter the city. The first community garden in Tel Aviv-Yafo was established in the Maoz Aviv neighborhood at the beginning of the 2000s. By the end of 2017, there were 38 community gardens in which groups of residents, seniors, asylum seekers, migrant workers, families, teens, and civic organizations are active. The gardens are established at the initiative of residents with support from the Municipality. There is a municipal procedure in place for establishing and managing a community garden in cooperation with the Environmental Protection Authority and the City Beautification Division. The procedure stipulates how to establish and run a community garden and outlines the different types of support that can be received from the Municipality.

Green Labels for food businesses

The Tel Aviv-Yafo Municipality awards the Green Label to businesses in recognition of their eco friendly business management. The Green Label links the city's green agenda with business efficiency, thereby creating an appealing program that helps business owners adopt solutions that contribute to their profits as well as to the urban quality of life and environment. The Green Label was developed together with the Ministry of Environmental Protection and the certification and monitoring are carried out by Sekal Ltd. To date, 50 businesses have completed the efficiency process and received the Green Label. Over 100 more businesses are still in the process, and many of them will complete it – and importantly, even those businesses that do not receive the Green Label will have still improved their sustainability practices.

Every year, the certified businesses in Tel Aviv-Yafo save:

- Over 250,000 USD in electricity and water consumption – by taking simple steps that produce considerable profits, such as transitioning to energy-saving lighting, water-saving faucets or preferring the use of energy-saving appliances in the kitchen;
- Roughly 2.5 million disposable products – by improving the management of products such as napkins, straws, beer coasters, takeaway packaging, etc.;
- Around 3,700 deliveries of merchandise to the business – thereby reducing costly labor hours and the entry of trucks into the city's congested streets;
- About 25 tons of leftover food and organic waste – by streamlining inventory management and reducing depreciation;
- Around 650 tons of greenhouse gas emissions.

And they reinforce their ties with the community – by donating leftover food, promoting local produce, collaborating with a variety of nonprofits and social organizations, and more.

In addition to expanding the Green Label to more and more food businesses, Tel Aviv-Yafo, together with UNEP and the Israeli Ministry for Environmental Protection (as part of the SwitchMed program), is taking a leap forward and is now developing a **digital platform** that will provide useful information in a very accessible format, to enable all food businesses, not only in the city, to promote steps for improving business efficiency while reducing the negative environmental impacts in a measurable way. This digital platform is being built based on our extensive experience in Tel Aviv-Yafo. When launched, this platform will be available to all businesses in the city and outside of it, and will be used to promote responsible consumption of food in cities.

Responsible consumption is also strongly dependent on food choices. One year ago, *The Independent* published that Tel Aviv-Yafo is the "Vegan capital of the world", with over 400 vegan and vegetarian restaurants scattered throughout the city, offering a staggering variety of tastes and cultural experiences. Since the environmental

burden of animal-based food products – especially meat – is very high, the success of vegan and vegetarian restaurants promotes responsible and environmentally-friendly consumption in Tel Aviv-Yafo.

Education

The primary focus for kindergartens in the city is to introduce children to healthier snacks, while working with parents and educational staff to create a healthier environment. The objective is to promote positive behavioural changes from a young age. This ensures that children will be exposed to healthier options earlier in life, which will positively affect their health as they mature. The Tel Aviv-Yafo municipality has started training courses for kindergarten and daycare staff in order to provide the necessary knowledge, tools and environment for promoting active and healthy lifestyles while fostering behavioural change. The assistant teachers of the kindergartens in collaboration with dieticians and chefs worked to incorporate healthy eating and education into the classroom. Education was implemented by training the assistant teachers and having children prepare their own healthy snacks.

Best practice in effective governance is being exhibited in the growing collaboration between Bon Appetite and the Green Leadership Program in elementary schools. In the program, students aged 9-12 become active green leaders in their school. They choose a topic related to sustainability and then advocate for sustainable change. Recently, "Reducing Food Waste" was added as a new topic, and apparently the students care a lot about this issue and tend to choose to promote it.

Lastly, a healthy, sustainable "pop-up" cafeteria program was implemented in one of the high schools in Tel Aviv-Yafo. The purpose of this unique cafeteria was to examine different ways to improve the cafeteria model in the city. It was found that students enjoyed using a prepaid card to select a predetermined meal, with the ability to spontaneously buy sides and drinks. This was also better for business, since it lowered the amount of risk while also being affordable for students. It is clear that students highly enjoyed having a hot meal – which is not the standard in Israeli high schools – and sitting in a more established communal environment during school lunch.

Logistics

Food logistics in the city is a challenging and complex problem. After studying logistical solutions implemented in other cities, the strategic planning team were still not sure which solution would work best in Tel Aviv-Yafo. Therefore, they decided to start with a round table of all stakeholders, including suppliers, business operators, tenants, municipal officials, academics, and more. They convened six brainstorming meetings, in which they learned mostly about the barriers and hurdles of food logistics in Tel Aviv-Yafo. The action direction that was finally adopted is to pre-plan in detail all the logistics in every large construction project in the city, such as shopping malls, business zones, entertainment areas, etc. It is very difficult to reduce the size of the future logistics areas while trying to improve the function of the food businesses. One of the solutions that is being planned is to build micro-logistics centers underground. These centers will receive produce during the night, when roads are free and large trucks can enter the city easily; then they will store the food overnight and distribute the food during the day using small environmental-friendly electric vehicles. Of course, this logistics solution is not suitable for frozen and refrigerated food items, but is very suitable for dry foods.

Waste Management

Waste management is a major challenge in Tel Aviv-Yafo, not only due to the logistics of collecting the waste on streets that are active 24/7, but mostly in terms of waste treatment. This is managed by the ArrowBio technology, which combines an innovative and patented separation system that segregates the mixed municipal soil waste (MSW)

into different fractions, enabling separation of the organic matter as a feeding material to the anaerobic digestion system and to recover different raw materials for recycling. As a result, the residual matter from the separation system is a relatively small fraction and landfill requirements are reduced dramatically.

The process aims to achieve a high separation ability of over 95%, which will allow treating homogeneous streams of waste and make recycling much more effective. The ArrowBio Anaerobic Digestion (AD) waste-treatment technology is based upon a wet system (Total solids < 15%). The treatment uses high-rate reactors in a two-stage process.
The final result of the AD process is high quality Biogas containing 60-70% methane (CH4) and high quality soil amendment that is ready for the composting process, clean of contaminating materials such as glass or metal.

This waste treatment process includes recycling of plastics, metals and glass; however, the recycling levels are relatively low due to the single stream for the mixed MSW collecting system. Nevertheless, this treatment method is probably the most suitable for Tel Aviv-Yafo, for two reasons. First, because it saves the space of different types of recycling bins (because only very few types of recycling bins are required), and reduces the need for the multiple truck fleets that are required in typical recycling approaches, and their associated emissions and pollution. Second, currently over 95% of electricity in Israel is produced from non-renewable sources, such as gas and coal, and hence the biofuel produced from the waste of Tel Aviv-Yafo – although not very efficient – nevertheless is very cost-effective and environmentally-friendly at

the national level. For these two reasons, the waste management system in Tel Aviv-Yafo is an integral part of responsible food consumption.

Future Outlook

In the near future, the urban food policy program will be cross-linked with the city's resilience programme via projects of sustainable and healthy neighborhoods. At the 4th Annual Gathering of the Milan Urban Food Policy Pact signatory cities, which took place in Tel Aviv-Yafo in September 2018, the Environmental Authority together with the municipal Resilience unit organized a session which concluded that urban food programs must be an essential component of any resilience programs. Tel Aviv-Yafo is now expanding the Sustainable Neighborhood Program to additional neighborhoods with low socioeconomic status, and is adding sustainable and healthy food consumption into this program.

Finally, Tel Aviv-Yafo is now considering future complementary economy tools, such as complementary currency, community economies, crowdfunding, and food cooperatives. These tools may play a significant role in responsible food consumption and production systems in the city. However, Tel Aviv-Yafo is still exploring the best avenues to implement these tools.

Conclusions:

1. Building a comprehensive food program is essential for achieving SDGs.
2. The food program must be suitable to the specific city, residents, climate, culture and additional characteristics of the city and area.
3. A city should not avoid tackling complex problems with low chances for success! As with the logistics issue in Tel Aviv-Yafo, it is recommended that at least the initial steps will be taken: mapping the problem, conducting round table discussions with all stakeholders, and aiming for simple, small-scale solutions, while keeping the expectations realistic.
4. Child Education must be a key component of any food program, since our eating and consumption habits are shaped at a very early age.
5. The food program should look into the future and consider using new tools, emerging technologies, and unconventional concepts in order to improve the food system and make consumption and production more responsible and more sustainable.

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[108] Gangdong-gu is a municipal district in Seoul. *Smallholder producers in Wanju-gun are mostly old farmers (mostly women) growing a variety of products in small volume. These products are being provided to the "public plate" for children's day care centers and other facilities in Gangdong-gu, Seoul.*

THEMATIC AREAS

Governance

Monitoring & Evaluation

Territorial Development

Natural Resources Management

Legislation

Awareness-Raising

City-to-City Networks

6. POLICY RECOMMENDATIONS

The **2030 Agenda and its 17 Sustainable Development Goals** (SDGs), adopted by 193 world leaders in September 2015 at a historic UN Sustainable Development summit, represent a **universal framework of action for all countries across different territorial scales, to end all forms of poverty, fight inequalities and tackle climate change, while ensuring that no-one is left behind.** This global development agenda sets targets across the social, economic and environmental dimensions of sustainable development by the year 2030. The urgency of changing the prevailing model of development and growth and commit to climate action globally was also stressed not only by the **Paris Agreement** (December 2015), and reiterated in the special report on Global Warming, released in October 2018 by the Intergovernmental Panel on Climate Change.[132]

Cities are critical for achieving the SDGs (not only SDG 11, Sustainable cities and communities, calling for inclusive, safe, resilient and sustainable cities and human settlements), as over half of the world population currently lives in urban settlements, the current size of which is expected to double by 2050.

While the speed and scale of urbanisation poses major challenges for sustainable development, cities can also be catalysts of change, by aligning planning priorities and actions under an integrated framework, which leads not only to increased prosperity, social inclusion and resilience, but also to environmental sustainability.

Healthy and sustainable food systems lie at the core of the 2030 Agenda. As outlined in this publication, many cities are leading the way in climate action and in encouraging healthy diets to advance the implementation of the SDGs. Concrete examples have been presented as case studies, from Milan, New York, Seoul, Tel Aviv, Rio de Janeiro, Ouagadougou and Sydney. Some of them operate under the framework of the Milan Urban Food Policy Pact (MUFPP) and its 37 recommended actions, which now includes 179 cities throughout the world.

The **recommendations** provided in this section are aimed not only at local, regional and national government leaders and policy makers, but also at practitioners from business and civil society and international organisations. These players can all contribute to **building up a global momentum for the urgency of taking action and implementing the change required to transform and reorient the food system and the world we live in for present and future generations.**

NOTES

[132] IPCC (2018). Global Warming at 1.5°C. Available at: http://www.ipcc.ch/report/sr15/

1. Governance

Cities taking the lead in the development and implementation of food policy strategies

Recommendations:

- Develop comprehensive **urban food policies**, based on in-depth, local, food system assessments and monitor the outcomes, using **the SDGs as a global framework for action**;
- Coordinate, implement and monitor food policies with **specific budgets and human resources**;
- Ensure **coordination** between local-regional-national players, with particular attention to the integration of metropolitan and urban dimensions;
- Encourage the **exchange of good practices**;
- Create **umbrella initiatives**, where innovations can be nurtured, exchanged and scaled up;
- Include the **metropolitan dimension** in the action of the city's food policies;
- **Engage citizens and local actors** in participatory planning, implementation and monitoring.

The food-city nexus and the urgency for integrated, multi-level policy approaches, which bring together **all the urban actors from local authorities, civil society organisations, the private sector and research bodies, are widely recognised in order to develop the 2030 Agenda and transform urban food systems.**

Integrated territorial development, complemented by sustainable (specifically climate-neutral), regional trade, must become a **priority in government strategies**. This approach can foster steady, inclusive and sustainable economic growth and reduce inequalities, while simultaneously prompting climate action and promoting the restoration and sustainable management of natural resources (SDG 8 Decent work and economic growth, SDG 10 Reducing inequalities, and SDG 13 Climate action).

Municipalities, in collaboration with central governments, will need to lead the development and implementation of a food policy strategy and ensure **the coordination of local players to guarantee food and nutrition security, support economic development and ensure human well-being and a healthy environment** (SDG 9 Industry, innovation and infrastructure). Subsidiarity, efficiency, transparency and accountability underpin sustainable urban governance.

Long-term engagement and synergies with other urban challenges will require an exchange of information and, more specifically, **the dissemination of activities and good practices across cities, between local and national levels** and with the relevant players in the food system. It is important not only to recognise, give visibility to and **upscale inspiring experiences**, but also to support fragile, innovative, start-up concepts on sustainable food.
It is imperative to **create inclusive umbrella initiatives** (via platforms, networks, incentives, campaigns, technical support, etc.), where innovations can be exchanged, nurtured and incubated.

Citizens must be directly involved in decision-making processes using a participatory approach. Setting up a food policy council and/or developing a food strategy are effective means to engage players and encourage action.

2. Assessment, Monitoring & Evaluation

Developing benchmarks and key performance indicators to track progress in urban food systems

Recommendations:

- Identify **city-specific indicators** through a participatory approach;
- **Identify best practices** in monitoring the impacts of actions at a city level;
- Establish **comparable benchmarks** and key performance indicators for monitoring urban food system transformation and actions;
- **Monitor progress** through relevant methodologies and initiatives, such as the "MUFPP-FAO Monitoring Framework" on a systematic basis, with the SDGs as a framework;
- **Bridge science and policy** to enable wise decisions.

When developing effective **benchmarks and key performance indicators for urban food system transformation based on the SDGs**, which are comparable across national jurisdictions, it is important to **build a sense of common purpose and strengthen commitments** across local and national levels, while acknowledging local specificity. This is a vital step to reduce inequality within and among countries (SDG 10, Reduced Inequalities).

The dimensions of **interdisciplinary, inter-institutional and multi-level governance** are clearly essential for strategic work, the assessment, monitoring and evaluation of complex systems. Several **monitoring frameworks**, including the one developed by the MUFPP with FAO, are currently being tested.

Projects looking at the complexity of food systems to monitor the challenges and progress of national food systems, such as the **Food Sustainability Index (FSI)** developed by the Economist Intelligence Unit with the BCFN, can provide information for city food system planning. The FSI analyses comprehensively food system sustainability in its social, economic and environmental dimensions in 67 countries in the world and is aligned with the SDG framework for the purpose of contributing to the achievement of the 2030 Agenda for Sustainable Development.

3. Territorial Development

Promoting sustainable territorial development and city-region approaches

Recommendations:

- Promote **sustainable territorial development** and **city-region approach**;
- Align territorial planning and food policy;
- Strengthen **rural-urban linkages** to secure well-functioning supply chains, protect and strengthen livelihoods and to increase access to markets and employment, while at the same time providing ecosystem services;
- **Reconnect producers and consumers** by connecting public procurement with local producers and facilitating new market spaces for local products.

Municipalities must be aware of, and accountable for their impact on the territory. They play a key role in supporting sustainable food production and managing natural resources (forests, land and water) not only for the public good for both rural and urban areas, but also to promote decent employment in both those areas.

A sustainable, urban food system requires constant dialogue and close collaboration between the Municipality and the surrounding rural Municipalities as part of a city-region approach. This approach is consistent with SDG 17 (Partnerships for the Goals). This dialogue must include questions on what kind of food is to be grown, how, where, by whom and why.

The principle of subsidiarity can underpin the establishment of clear targets and implementation of action. Close collaboration in the development is needed to ensure access to healthy diets, employment and social protection, and guarantee appropriate environmental and biodiversity management (including SDG 2 Zero Hunger, SDG 3 Good Health and Well-being, SDG 6 Clean Water and Sanitation, SDG 8 Decent work and economic growth, SDG 14 Life below water, SDG 15 Life on Land).

The promotion of short food chains (e.g. farmers' markets, public procurement for schools, community-supported agriculture, etc.) based on seasonal production has proved to be a successful means to strengthen rural-urban linkages and recreate social links between producers and consumers.

4. Natural Resources Management

Promoting sustainable agricultural practices and climate action

Recommendations:

- Improve **natural resources management** in agriculture, also by retrieving agro-ecological farm practices, which boost resilience;
- **Make an inventory of seasonal products from local biodiversity and related indigenous knowledge** with a view to support sustainable management of local species;
- Enhance the resilience of local producers by encouraging the creation of **agricultural districts**;
- Build **resilience against disasters and climate risks** in agriculture;
- Take action for **skills building and training** along the food value chain;
- Build **climate change adaptation and mitigation strategies** across different levels of governance.

Until recently, urban planning had paid little attention to food, resulting in a disconnection between cities importing most of the food they consume and the rural areas geared by agriculture policies towards export.

Prioritising sustainable natural resources management is essential for implementing sustainable practices in food production (SDG 12 Responsible production and consumption), which should also protect, restore and promote the sustainable use of land and aquatic ecosystems (SDG 14 Life below water, SDG 15 Life on land). The impact of agricultural practices (e.g. use of fertilisers and pesticides) on soil and water quality and human health of both producers and consumers should also be monitored, and any relevant agro-ecological practices retrieved.

Implementing new approaches to natural resource management will require multi-stakeholder actions, skills building and training along the food system.

It is particularly urgent to combat climate change and its impacts (SDG 13 Climate action).
Local and central governments need to design and implement comprehensive solutions to decrease carbon emissions and increase community resilience.
These measures should also encourage consumers to follow a healthy, sustainable diet.

5. Legislation

Enabling sustainable development by means of appropriate legal and regulatory frameworks

Recommendations:

- Create **fiscal incentives** to guide business towards more sustainable behaviour;
- **Identify legal and procedural constraints and actively coordinate legislation** on specific sectors of the food system in order to increase the effect of each measure;
- Establish **thematic boards** among same regional municipalities to revisit and complement legislation on food-related issues.

Laws and regulations have been established at different points in time, within different sectors (land tenure, food standards, hygiene, human rights, energy and transport) and with different purposes. **Given the interdisciplinary nature of food systems and their local specificities, the legal and regulatory frameworks underpinning the development and implementation of sustainable approaches need to be revisited in order to support local implementation of SDGs**.

The legal and regulatory framework should be reviewed for territorial relevance and feasibility and should provide insights for work on national, inter-country and global legislation and regulations.

The combination of public policy (more specifically public procurement and private sector accountability constitute important drivers for this rationalisation. Fairer, more resilient food systems will require some degree of regionalisation.

6. Awareness-Raising, Knowledge Management, and Education

Empowering institutions and citizens to drive change

Recommendations:

- **Establish school food and nutrition education**, including on-line curricula, as early as in primary schools, supported by national policies, regulations and institutions;
- Leverage on cities to include food and nutrition education in national school programmes;
- Promote **sustainable, healthy diets** in canteens, universities, schools, restaurants, makets etc.;
- Monitor, incentivise and scale up **best practices**;
- **Make public opinion aware of, and become involved** in how to overcome poor nutrition and unsustainable food practices.

Increasing awareness of both institutions and citizens of the implications of their food choices and the need to transform the world we live in, starting from the food system and the role that cities and city dwellers can play as catalysts of change, is a precondition for fixing the food system. Sustainable, healthy diets are at the core of the aims of a number of SDGs, from SDG 2 Zero Hunger to SDG 13 Climate Action.

Many cities have set up tools and procedures to share relevant information and experiences. **Action-learning and knowledge management needs to be both internal** (within municipalities and within territories) **and external** (across cities and territories sharing similar opportunities and challenges) **to build up skills and empower institutions and citizens**. It is important to reach different stakeholders and target groups with different approaches.

Ensuring inclusive and equitable quality education and promoting lifelong learning opportunities (SDG 4 Quality education) should be treated as a priority. In order to ensure healthy lives and promote well-being (SDG 3 Good Health and Well-being), city dwellers must **acknowledge the role of urban planning in transforming the food system.**

7. City-to-City Networks

Building networks to catalyse change

Recommendations:

- **Participate actively** in existing national and international Cities Networks to exchange experiences and lessons learnt;
- **Ensure knowledge management** within and across municipalities and territories, and with relevant players at all levels.

City-to-city collaboration is the basis not only for effective action-learning and knowledge management, but also for enabling a positive change in social, economic and environmental terms. **Cross-pollination and the sharing** of inspiring experiences are important for motivation.
They can help speed up local innovation and contribute to the formulation of strategies.

A variety of networks has been set up for this purpose on a geographical or thematic basis and has led to the development of Information, Communication and Technology (ICT) platforms.

Bigger and stronger networks, especially across the country, along with **properly trained city officers**, can play a pivotal role in **influencing national policy** to ensure inclusive, safe, resilient and sustainable urban settings. This will help to achieve SDG 11 (Sustainable Cities and Communities) and SDG 17 (Partnerships for the Goals).

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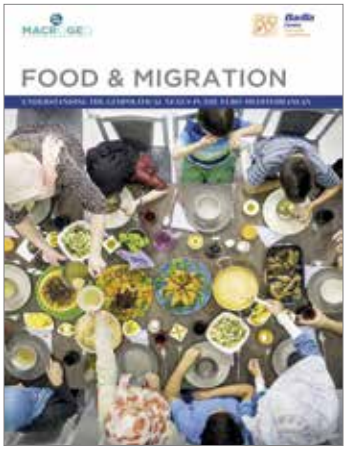

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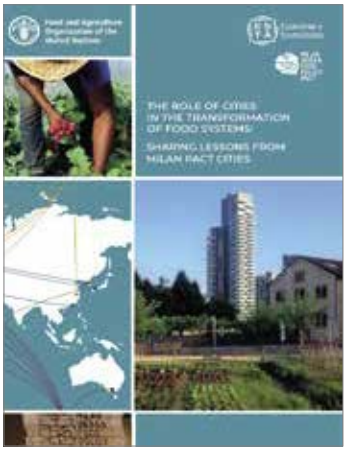

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