



**POLITECNICO
DI TORINO**

Collegio di
Pianificazione e
Progettazione

Master's degree programme in
Territorial, Urban, Environmental and Landscape Planning
Curriculum: Planning for the Global Urban Agenda

Master Thesis

**The food system from a territorial perspective: policy
framework, planning tools and practices at global
scale.**

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Academic Year 2020/2021

INDEX

List of Figures	iii
List of Tables	vi
Abbreviations	vii
INTRODUCTION	ix
CHAPTER 1 The Global Food Policy Framework	1
1.1. The relationship between Food Security, Urbanization and Globalization	1
1.1.1. International framework of the Right to Food	2
1.1.2. The Urbanization process and the consequences for food security	8
1.1.3. The Globalization process and its effect on food	17
1.2. Food, Sustainable Development Goals (SDGs) and Urban Agenda	25
1.2.1. The Agenda 2030 and its Sustainable Development Goals (SDGs)	25
1.2.2. The New Urban Agenda	32
1.2.3. National Strategies and Targets	34
1.3. The European Framework for food policies	35
1.3.1 The New Green Deal	36
1.3.2. “Farm to Fork” Strategy	39
1.3.3. The Common Agricultural Policy (CAP)	46
1.4. Strengths and weaknesses of the food policy framework at global scale	50
CHAPTER 2 Food Planning: a review of the literature and European Projects	52
2.1. Literature review on Food Planning	52
2.1.1. Originis, Methods, Concept and Evolution of the term	53
2.1.2. The relation between Urban and Rural	56
2.1.3. Urban Agriculture	59
2.1.4. Urban Food Policies and Strategies	61
2.1.5. Urban Food Networks	64
2.2. European Projects review	72
2.2.1. Agromere	72
2.2.2. Urbact III	75
2.2.3. Superbfood	77
2.2.4. Food Meters	79
2.2.5. Capsella	84
2.2.6. FoodE	86
2.2.7. ProIGreg	88
2.2.8. Skin	91
2.2.9. CityFood	93

2.2.10. Food Heroes	95
2.2.11. Comparison of the European Projects	97
CHAPTER 3 The relation between Spatial Planning and Food Planning: an overview of International Case Studies	100
3.1. Case studies in the international context.....	101
3.1.1. London: transformation of urban neighbourhoods.....	102
3.1.1. Vancouver: systemic approach to food policy and planning.....	106
3.1.3. Comparison of international case studies	110
3.2. The Italian context: from National to Local scale	112
3.2.1. Italian food strategies and policies.....	112
3.2.2. Piedmont Regional Law 1/2019.....	115
3.2.3. Turin: toward a Food Policy	117
3.2.4. Milan: the first city in the Italian scenario	122
CONCLUSION.....	127
LEGISLATIVE & AMMINISTRATIVE REFERENCES	131
REFERENCES.....	132
WEB REFERENCES	141

List of Figures

CHAPTER 1 – The Global Food Policy Framework

Figure 1 - World Total Population. Source: https://population.un.org/wpp/Graphs/DemographicProfiles/Line/900	1
Figure 2 - Binding and Non-binding Instruments related to the Right to Food. Source: own elaboration from: (FAO, 2014)	3
Figure 3 - Four essential Human Freedoms. Source: own elaboration from: (Roosevelt F.D., 1941)	4
Figure 4 - States Parties' three forms of obligations. Source: own elaboration from: https://www.un.org/unispal/document/auto-insert-187548/	7
Figure 5 - Percentage of population residing in Urban and Rural Areas. Source: own elaboration from: https://population.un.org/wup/Download/	9
Figure 6 - Four Dimensions of the Food Security. Source: own elaboration from: http://www.fao.org/3/a-al936e.pdf	11
Figure 7 - Changes in Food System. Source: own elaboration from: (Kennedy, et al., 2004) ...	13
Figure 8 - Factors that influence the food prices and the expenditures. Source: own elaboration from: (Ruel & Garrett, 2004)	14
Figure 9 - Important changes in food security since its first recognition. Source: own elaboration from: (Maxwell, 1994)	15
Figure 10 - Typologies of TNCs. Source: own elaboration from: (Phillips, 2006)	17
Figure 11 - Elements identified by the capitalist vision. Source: own elaboration from: (Pettenati & Toldo, 2018)	19
Figure 12 - Main goal of the Transnational Food Corporations (TNCs). Source: own elaboration from: (OXFAM, 2013)	20
Figure 13 - Advertising and marketing strategies of the Transnational Corporations. Source: own elaboration from: (Hawkes, 2006)	22
Figure 14 - Negative aspects of the Agro-Industrial model. Source: own elaboration from: (Pettenati & Toldo, 2018)	23
Figure 15 - Phenomena that allow the changes in diets. Source: own elaboration from: (Kennedy, et al., 2004) and http://www.fao.org/newsroom/en/focus/2004/51786/article_51797en.html	24
Figure 16 - Ambition of the Sustainable Development Goals (SDGs). Source: own elaboration from: (Scholz, 2015)	26
Figure 17 - Core principles of the 2030 Agenda. Source: own elaboration from: https://www.ie.edu/school-global-public-affairs/about/news/what-is-the-2030-agenda/#	26
Figure 18 - Subdivision of the SDGs according to the 5P's approach. Source: own elaboration from: https://whatcanyoudo.earth/selecting-the-sdg-for-your-action/the-5-ps/	28
Figure 19 - Pillars of the Food Security. Source: own elaboration from: (FAO, 2006)	29
Figure 20 - Habitat III & the New Urban Agenda. Source: own elaboration from: http://habitat3.org/the-new-urban-agenda/	33
Figure 21 - Specific goals of the ASviS. Source: own elaboration from: https://asvis.it/missione/	35
Figure 22 - Main Goals of the European Green Deal. Source: own elaboration from: (UE, 2019)	36
Figure 23 - Four main goals of the "Farm to Fork" Strategy. Source: own elaboration from: https://ec.europa.eu/food/farm2fork_en	39
Figure 24 - Initiatives and actions aimed at ensuring the sustainability of Food production. Source: own elaboration from: (Commissione Europea, 2020)	41
Figure 25 - Sustainable Food System. Source: own elaboration from: (FAO, 2018)	42

Figure 26 - Concrete actions of the European Commission (EC) in order to ensure sustainable Food Processing & Distribution. Source: own elaboration from: (Commissione Europea, 2020)	43
Figure 27 - Consequences of changes in food consumption pattern. Source: own elaboration from: (Schmidhuber, 2004)	44
Figure 28 - Food Loss and Food Waste. Source: own elaboration from: (FAO, 2015)	45
Figure 29 - Main aims of the Common Agriculture Policy. Source: own elaboration from: https://eur-lex.europa.eu/legal-content/EN/TXT/	46
Figure 30 - Main steps of the CAP. Source: own elaboration from: (Commissione Europea, 2012)	47
Figure 31 - Nine objectives of the CAP. Source: own elaboration from: https://ec.europa.eu/info/food-farming-fisheries/key-policies/common-agricultural-policy/future-cap_en	48
Figure 32 - Factors that explain the heightened awareness among planners that the food system. Source: own elaboration from: https://www.planning.org/policy/guides/adopted/food	53
Figure 33 - Main steps related to the interaction between "food" and "urban planning". Source: own elaboration from: (Cabannes & Marocchio, 2018)	54
Figure 34 - Conventional and Community Food System. Source: own elaboration from: (Raja, et al., 2008)	55
Figure 35 - Spatial and Sectoral Flow Related to the Rural-Urban linkages. Source: own elaboration from: (Akkoyunlu, 2013)	57
Figure 36 - Economic, social and cultural transformations that shaped the rural-urban areas. Source: own elaboration from: (Tacoli, 2003)	58
Figure 37 - Rural-Urban linkages in the Space Continuum. Source: own elaboration from: (Ndabeni, 2015)	58
Figure 38 - Location of urban agriculture (UA), peri-urban agriculture (PUA) and rural agriculture (RA) within the urban-rural continuum. Source: own elaboration from: (Opitz, et al., 2016)	60
Figure 39 - Main themes of the food policies at the international level. Source: own elaboration from: (Daconto, 2017)	62
Figure 40 - Main objectives of the Urban Food Strategies (UFS). Source: own elaboration from: (Dansero, et al., 2015)	63
Figure 41 - Main goals of the AFNs. Source: own elaboration from: (Dansero & Pettenati, 2015) and (Dansero & Puttilli, 2014)	65
Figure 42 - Different forms of Alternative Food Networks. Source: own elaboration from: (Marsden, et al., 2000)	65
Figure 43 - First typology of Alternative Food Networks within Italian territory. Source: own elaboration from (Dansero & Pettenati, 2015)	66
Figure 44 - Second typology of Alternative Food Networks within Italian territory. Source: own elaboration from: (Dansero & Pettenati, 2015)	66
Figure 45 - Geographical location of the city of Almere (Netherlands). Source: own elaboration	72
Figure 46 - Seven Principles of Almere. Source: own elaboration from: (Roorda, et al., 2011)	73
Figure 47 - Territorial framework of the project area. Source: own elaboration from: https://www.google.it/maps/place/Almere,+Paesi+Bassi/	74
Figure 48 - Representation of the URBACT programme member States. Source: own elaboration from: https://interreg.eu/programme/urbact-iii/	75
Figure 49 - City-Regions involved in the SUPURBFOOD project. Source: own elaboration	78
Figure 50 - The Food Meters conceptual design in relation to the Food Triangle. Source: own elaboration from: http://www.foodmetres.eu/	80
Figure 51 - Partners involved in the Food Meters project. Source: https://cordis.europa.eu/project/id/312185/it	81

Figure 52 – Partners involved in the Capsella project. Source: https://cordis.europa.eu/project/id/688813	84
Figure 53 - Multidisciplinary community-driven use cases within the Capsella project. Source: own elaboration from: http://www.capsella.eu/	85
Figure 54 - main goals of the Capsella project. Source: own elaboration from: http://www.capsella.eu/objectives/	85
Figure 55 – Partners involved in the FoodE project. Source: https://cordis.europa.eu/project/id/862663/it	86
Figure 56 - Method by which FoodE project intends to achieve its goals. Source: own elaboration from: https://cordis.europa.eu/project/id/862663/it	87
Figure 57 – Partners involved in the proIGreg project. Source: https://cordis.europa.eu/project/id/776528/it	89
Figure 58 – Partners involved in the SKIN project. Source: https://cordis.europa.eu/project/id/728055/it	91
Figure 59 - Work Packages identified by the CityFood project. Source: own elaboration from: https://www.cityfood-aquaponics.com/index.php/project-description/	93
Figure 60 - Geographical location of the Living Labs involved in the CityFood project. Source: own elaboration from: https://www.h-klimek.de/cityfood/	94
Figure 61 - Main solutions against food waste generated from the Food Heroes project. Source: own elaboration from: https://www.nweurope.eu/projects/project-search/food-heroes- improving-resource-efficiency-through-designing-innovative-solutions-to-reduce-food-was... ...	95
Figure 62 - Geographical location of the case studies taken into consideration. Source: own elaboration.....	102
Figure 63 - Main goals of the London Food Board. Source: own elaboration from: https://www.london.gov.uk/what-we-do/business-and-economy/food/london-food-board#acc-i- 47402	103
Figure 64 - Main themes of the London Food Strategy. Source: own elaboration from: (London Development Agency, 2006)	103
Figure 65 - Main actions promoted and included in the Croydon's Plan. Source: own elaboration from: https://www.london.gov.uk/what-we-do/business-and-economy/food/food- flagships/croydon-food-flagship	104
Figure 66 - Five main principles included within the Vancouver's Food Charter Vision. Source: own elaboration from: (City of Vancouver, 2007).....	107
Figure 67 - Main goals of the Vancouver's Regional Food System Strategy. Source: own elaboration from: (Metro Vancouver, 2011).....	108
Figure 68 - Main goals of the Food District. Source: own elaboration from: http://www.fidaf.it/index.php/i-distretti-del-cibo-novita-e-aspettative/?print=pdf	114
Figure 69 - Main phases of the Nutrire Torino Metropolitana (Feeding Metropolitan Turin). Source: own elaboration from: (Peano & Toldo, 2015).....	119
Figure 70 - Main contents of the Assessment Milan Food System. Source: own elaboration from: (Calori & Magarini, 2015)	122
Figure 71 - Priorities of the Milan Food Policy. Source: own elaboration from: (Città di Milano, 2015)	124

List of Tables

CHAPTER 1 – The Global Food Policy Framework

Tabel 1 - Population of the Urban and Rural Areas in 2018. Source: own elaboration from: https://population.un.org/wup/Download/	9
Tabel 2 - Population Residing in "More Developed" & "Less Developed" Regions. Source: own elaboration from: https://population.un.org/wup/Download/	10
Tabel 3 - The first 10 Transnational Food and Drinks Corporations within the Global Food Industry. Source: own elaboration from: (Pettenati & Toldo, 2018)	21
Tabel 4 - List of the Sustainable Development Goals included in the 2030 Agenda. Source: own elaboration from: (United Nations, 2015).....	27
Tabel 5 - Targets and respective aims of the Goal 2 of the 2030 Agenda. Source: own elaboration from: (United Nations, 2015).....	28
Tabel 6 - Indicators proposed by the IAEG-SDGs for the Goal 2 of the 2030 Agenda. Source: own elaboration from: https://undocs.org/A/RES/71/313	31
Tabel 7 - Comparison of the expected result & future actions of the main goals of the European Green Deal. Source: own elaboration from: (UE, 2019).....	38

CHAPTER 2 – Food Planning: review of the literature and European Projects

Tabel 8 - Initiative & Programs proposed by the Guide on CRFP. Source: own elaboration from: (Raja, et al., 2008)	56
Tabel 9 - Main features of Urban Gardening and Urban Farming. Source: own elaboration from: (Mazzocchi & Marino, 2020).....	60
Tabel 10 - Analysis and Comparison of the literature related to Food Planning. Source: own elaboration.....	67
Tabel 11 - Types of NBSs adopted by each city participating in the ProIGreg. Source: own elaboration from: https://progireg.eu/the-project/	90
Tabel 12 - Expected results from the Work Packages within the CityFood project. Source: own elaboration from: https://www.cityfood-aquaponics.com/index.php/project-description/	94
Tabel 13 - Analysis and comparison of the European projects. Source: own elaboration	97

CHAPTER 3 - The relation between Spatial Planning and Food Planning: an overview of international case studies

Tabel 14 - Main programs developed and included in the Vancouver Food Strategy. Source: own elaboration.....	107
Tabel 15 - Priority actions areas of the Vancouver Food Strategy. Source: own elaboration from: (City of Vancouver, 2013)	108
Tabel 16 - Goals and strategies of the Regional Food System Strategy of Metro Vancouver. Source: own elaboration from: (Metro Vancouver, 2011).....	109
Tabel 17 - Analysis of the London case study. Source: own elaboration.....	110
Tabel 18 - Analysis of the London case study. Source: own elaboration.....	111
Tabel 19 - Italian regions and their main food-related policies, programs and strategies. Source: own elaboration from: (Marino & Giampiero, 2019)	113
Tabel 20 - Meetings that characterized the first phase of the initiative "Nutrire Torino Metropolitana". Source: own elaboration from: (Peano & Toldo, 2015).....	119
Tabel 21 - Goals of the Turin's Food Atlas. Source: own elaboration from: https://www.unisg.it/assets/Scheda-Atlante-Cibo-Torino.pdf	120
Tabel 22 - Actors involved in the Turin's Food Atlas. Source: own elaboration from: https://www.unisg.it/assets/Scheda-Atlante-Cibo-Torino.pdf	121
Tabel 23 - Main goals of the Milan Food Policy. Source: own elaboration from: (Calori & Magarini, 2015).....	123

Abbreviations

<i>AESOP</i>	<i>Association of European School of Planning</i>
<i>AFNs</i>	<i>Alternative Food Networks</i>
<i>APA</i>	<i>American Planning Association</i>
<i>ASviS</i>	<i>Alleanza Italiana per lo Sviluppo Sostenibile</i>
<i>CAP</i>	<i>Common Agricultural Policy</i>
<i>CESCR</i>	<i>Commission on Economic, Social and Cultural Rights</i>
<i>CRFP</i>	<i>Community Regional Food Planning</i>
<i>CRFS</i>	<i>City-Region Food System</i>
<i>CSA</i>	<i>Community Supported Agriculture</i>
<i>EC</i>	<i>European Commission</i>
<i>EEC</i>	<i>European Economic Community</i>
<i>EU</i>	<i>European Union</i>
<i>FAO</i>	<i>Food and Agricultural Organization</i>
<i>FIES</i>	<i>Food Insecurity Experience Scale</i>
<i>FMs</i>	<i>Farmers' Markets</i>
<i>FPs</i>	<i>Food Policies</i>
<i>FS</i>	<i>Food System</i>
<i>GA</i>	<i>General Assembly of the United Nations</i>
<i>GATT</i>	<i>General Agreement on Tariffs and Trade</i>
<i>GDP</i>	<i>Gross Domestic Product</i>
<i>GHG</i>	<i>Greenhouse Gases</i>
<i>GLA</i>	<i>Great London Authority</i>
<i>IAE-SDGs</i>	<i>Inter-Agency and Expert Group on SDGs Indicators</i>
<i>ICESCR</i>	<i>International Covenant on Economic, Social and Cultural Rights</i>
<i>IIED</i>	<i>International Institute for Environmental Development</i>
<i>IPBES</i>	<i>Intergovernmental Science-Policy Platform on Biodiversity Services</i>
<i>LFB</i>	<i>London Food Board</i>
<i>LDR</i>	<i>Less Developed Regions</i>
<i>MIPAAF</i>	<i>Ministry of Agriculture, Food and Forestry Policies</i>
<i>MDGs</i>	<i>Millennium Development Goals</i>
<i>MDR</i>	<i>More Developed Regions</i>
<i>MUFPP</i>	<i>Milan Urban Food Policy Pact</i>
<i>NAFTA</i>	<i>North American Free Trade Agreement</i>
<i>NSA</i>	<i>Non-State Actors</i>
<i>NUA</i>	<i>New Urban Agenda</i>
<i>OCED</i>	<i>Organization for Cooperation and Economic Development</i>
<i>POU</i>	<i>Prevalence of Undernourishment</i>
<i>PUA</i>	<i>Per-Urban Agriculture</i>
<i>RA</i>	<i>Rural Agriculture</i>
<i>SDGs</i>	<i>Sustainable Development Goals</i>
<i>SFSCs</i>	<i>Short Food Supply Chains</i>
<i>SFS</i>	<i>Sustainable Food System</i>
<i>SPGs</i>	<i>Solidarity Purchasing Groups</i>
<i>TNCs</i>	<i>Transnational Corporations</i>
<i>UA</i>	<i>Urban Agriculture</i>
<i>UDHR</i>	<i>Universal Declaration of Human Rights</i>
<i>UFPs</i>	<i>Urban Food Policies</i>
<i>UFSs</i>	<i>Urban Food Strategies</i>
<i>UN</i>	<i>United Nations</i>
<i>UNFCCC</i>	<i>United Nations Framework Convention on Climate Change</i>
<i>UPA</i>	<i>Urban & Peri-Urban Agriculture</i>
<i>VFPC</i>	<i>Vancouver Food Policy Council</i>
<i>WFS</i>	<i>World Food Summit</i>

<i>WHO</i>	<i>World Health Organization</i>
<i>WTO</i>	<i>World Trade Organization</i>
<i>WWII</i>	<i>World War II</i>

INTRODUCTION

This thesis is the result of the desire to combine together what I have learned from my university course in Territorial, Urban and Landscape Planning with two of my greatest passions: food and nutrition. The passion for these topics was passed on to me by my parents, ever since I was a child: at home, great importance has always been attached to what is brought to the table. Year after year, this passion has never faded, but rather grown. My university course has certainly had an impact, as it has not only prepared me professionally, but has also allowed me to investigate and discover various topics and aspects related to territorial and urban planning. I have thus understood that food and nutrition are both elements closely linked to the urban, social, cultural and economic dynamics of a city. In this regard, I still perfectly remember a sociology lecture given during the first year of my master's degree during which, through an analysis of the "Aurora" neighbourhood of my hometown, Turin, the link between food and territorial planning was repeatedly highlighted. From that day on, curiosity and the desire to investigate this issue in depth began to grow in me, allowing me to shape this thesis.

At the basis of my work, there are three central questions that I have tried to answer. Firstly, I asked myself: *"what role does food play in our lives?"*. I wanted to investigate what meanings are attributed to food today after reading, for example, that Susan Parham associates it with the concept of conviviality, and Carlo Petrini with that of happiness. But is this the case in our societies? I then asked myself: *"what is food planning and how does it relate to spatial planning?"*. The aim of this question was to understand, on the one hand, how the two disciplines manage to coexist and, on the other hand, how the links between the urban areas of the city and the immediately adjacent rural areas are organized. Finally, the last question I tried to answer was: *"what could be the benefits of proper urban food planning?"*. Each of these questions proved to be fundamental to the writing of this thesis, as they were my guidelines from the beginning on which I structured and organized the entire work.

In the first chapter, I therefore wanted to explore the relationship between the phenomena of urbanization, globalization, and food security. In order to do so, I first had to deal with a subject that is not strictly within my competence, that of law. Food is, first and foremost, a right of all human beings and I therefore felt it necessary to retrace the path that led to its affirmation. I analyzed the international framework of the Right to Food, I have examined the key steps that have led to its establishment within the international community, and finally I have explored what obligations are imposed on States to pursue and protect it. In doing so, the opinions of several experts have been taken into account, including that of Abraham Maslow and his Hierarchy of Need, elaborated in 1943. The American psychologist proposed that human needs can be organized into a hierarchy. This hierarchy ranges from more concrete needs, such as air, food and water, to abstract concepts such as self-fulfilment. According to Maslow, higher needs in the hierarchy begin to emerge when people feel they have sufficiently satisfied the previous needs (Maslow A., 1954). However, while this awareness led the international community, in the post-World War II period, to affirm the right to food, its practical application, its pursuit and, therefore, the identification of certain obligations for States has been more difficult and tortuous. Therefore, after first tracing the process of

affirmation of the concept of food security, I firstly analyzed the concept of urbanization, and then that of globalization, looking at how they inevitably impact on the way food is produced, distributed and consumed. Next, I asked myself what is being done, internationally, to ensure the right to food for all and to bring down the great numbers of hunger. I have therefore looked at two important documents: the 2030 Agenda for Sustainable Development and its respective 17 Sustainable Development Goals (SDGs), the second of which is “Zero hunger”; and the New Urban Agenda, adopted in Quito in October 2016. I then turned my attention to Italy and looked at how these documents have been received and what has been decided to do, at Italian level, to implement them in terms of national strategies. Finally, I looked at the European context, observing what tools and strategies were put in place there, too, focusing specifically on the New Green Deal, the “Farm to Fork” strategy, and the Common Agricultural Policy (PAC).

Chapter 2 is intended to be a review of the literature on food planning and some European projects. Origins, methods, concept and evolution of the term “*Food Planning*” are taken into analysis. Secondly, within an increasingly urbanized world, the relationship between urban and rural areas and how this is changing over the years is discussed. Important linkages between rural and urban activities emerge, along with a series of opportunities. Urban agriculture is then analyzed in more detail, highlighting the advantages it can bring: it is indeed taken into consideration by policy makers as a strategy for urban development. This is how I come to talk about urban food policies and strategies, confirming that cities and metropolitan areas constitute a strategic area of intervention aimed at orienting policy agendas towards more resilient models, recognizing agricultural production no longer as an activity antithetical to the city, but rather as a phenomenon integrated within it. At the end of the chapter, the very interesting concept of Urban Food Networks is investigated, tracing its emergence in the North American and European contexts where in the latter the term Urban Food Networks is used as a synonym for Short Supply Chains, where consumers and producers are in direct contact with each other. Finally, ten European projects are analyzed and a final comparison is made among them.

The third and final chapter looks at the concepts of food and special planning: given the urbanization process it is increasingly important to pay more and more attention to urban planning as a way to influence the development of food systems. Cities around the world are emerging as central deliberative spaces within which food governance systems are increasingly being shaped: these spaces represent a place where different actors can meet and discuss for the transition to fairer and more sustainable urban food systems. To this purpose, four case studies are analyzed. A first comparison is made between the cities of London and Vancouver, while secondly the contexts of Milan and Turin are investigated, after giving a general introduction to the Italian context, from the national to the local level, and looking at the food strategies and policies in place in our country.

CHAPTER 1

The Global Food Policy Framework

1.1. The relationship between Food Security, Urbanization and Globalization

According to the World Population Prospects 2019¹, which presents the latest round of global population estimates and projections by the United Nations (UN), the world's population continues to increase. The document states that in 2019 the world population was 7.7 billion, significantly higher than the one of the second half of the 1990s. Moreover, by taking into account the estimates and the future projections outlined in the document it is possible to see that the world's population will continue to increase, reaching 8.5 billion in 2030 (10% increase), 9.7 billion in 2050 (26%), and almost 11 billion in 2100 (42%) (United Nations, 2019). Rapid population growth presents challenges for sustainable development, even more so if we consider that this growth will not be uniform: while some countries continue to grow rapidly, others are seeing their population decline. Indeed, this endless demographic growth on a global scale has been, and still is, strongly intertwined with the urbanization process.

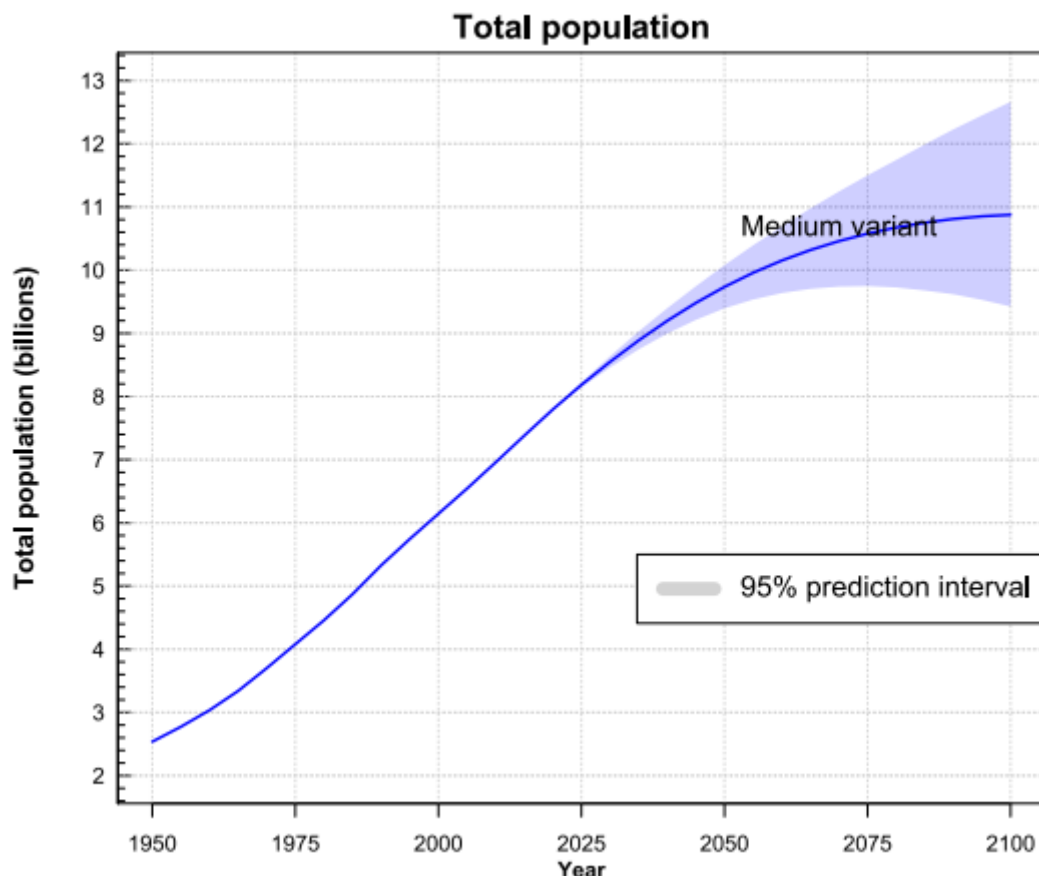


Figure 1 - World Total Population. Source: <https://population.un.org/wpp/Graphs/DemographicProfiles/Line/900>

¹ The 2019 revision of the World Population Prospects is the twenty-sixth edition of the United Nations population estimates and projections. It presents population estimates from 1950 to the present for 235 countries or areas, underpinned by analyses of historical demographic trends.

The 2018 Revision of World Urbanization Prospects², produced by the Population Division of the UN Department of Economic and Social Affairs (UN DESA), stated that in 2018 55% of the world's population lived in urban areas, a proportion that is expected to increase to 68% by 2050. Projections show that urbanization, the gradual shift in residence of the human population from rural to urban areas, combined with the overall growth of the world's population could add another 2.5 billion people to urban areas by 2050. Compared to 1950, the percentage of urbanized population has risen from 30% to 55%. The world's rural population, indeed, has grown slowly since 1950 and is expected to reach its peak in a few years. The global rural population is now close to 3.4 billion and is expected to rise slightly and then decline to 3.1 billion by 2050 (United Nations, 2018). This urban growth will inevitably have some consequences. For example, which is what this thesis aims to address, on food security. According to Calori and Magarini, within the urbanized areas, this need will be constantly satisfied by the arising of agro-industrial systems that are artificial and, above all, de-territorialized (Calori & Magarini, 2015). According to the authors, the phenomenon of urbanization has begun to intertwine strongly with the paradigm of globalization and, consequently, it has generated forms of organized economies on a global scale (Calori & Magarini, 2015). At this point, a question spontaneously arises: *is food becoming part of a business rather than a human right?*

The first chapter is divided in four sections. In section 1, the international framework of the right to food is given: key steps in the development of the right and State's Obligations are traced. Subsequently, the consequences of urbanization and globalization on food security are analyzed. In section 2, the focus is on the Sustainable Development Goals (SDGs) and the Urban Agenda. An attempt is made to understand the role and interrelationship of these two important documents. The European framework for food policies is taken into account in section 3, looking at The New Green Deal, the "Farm to Fork" strategy, and the Common Agricultural Policy (CAP). In section 4, space is given for reflection on strengths and weaknesses of the food policy framework at global scale.

1.1.1. International framework of the Right to Food

Food is central in understanding the human condition today. Nevertheless, it is still extremely complicated to define what food really means to us. Certainly, it is indisputable that food is essential to humans, along with water and air, and therefore represents a fundamental human need in order to keep our body's vital functions alive. In 1943, the American psychologist Abraham Maslow³, exposed his theory of human motivation, also known as "*Maslow's Hierarchy of Needs*". Among the basic needs, what he calls the

² This report presents the results of the official United Nations estimates and projections of urban and rural populations for 233 countries and areas of the world and for close to 1,900 urban settlements with 300,000 inhabitants or more in 2018.

³ Abraham Maslow was born on April 1, 1908 in New York City and became famous in the world of psychology thanks to his studies focused mainly on the theme of motivation. He developed a pyramid useful for a hierarchical classification of motivation. Maslow separated primary and physiological needs (water and food) from higher needs (esteem, security, affection), arguing that only after satisfying basic needs can any individual express higher level needs. Source: <https://www.stateofmind.it/bibliography/abraham-maslow/> - visited on 23rd July 2020

physiological or elementary needs, there is food: the non-satisfaction of these basic needs comports, at a certain reaction, the non-satisfaction of other needs at higher levels (Maslow A., 1954). In 2006, in his book “*Food is Culture*”, Massimo Montanari reiterated the importance of food as a pillar of culture and civilization. In particular, he argues that food is part of a cultural system, thus its production, preparation and consumption are merely a cultural act (Montanari M., 2006).

Together with civilization and agriculture, urbanization evolved as well generating a process of industrialization that has affected the world over the last two hundred years. At the beginning, it was thought that urbanization would benefit millions of people, especially those located in the Global North, generating the alleged “*development*”. However, in many areas of the globe this did not happen because of malnutrition or the simple inability of some individuals to guarantee themselves constant access to food (Petrini C., 2005). As a main consequence of these influences, agriculture has assumed the characteristics and dimensions of the classic industrial model, transforming itself into what today is commonly known as the “*agro-industrial model*”. Therefore, the current “*free*” trade economic model does not appear to be able to guarantee the necessary conditions for different national governments to fulfil their human rights obligations, including the right to food. That is the reason why it is necessary to initiate new re-think approaches to nutrition that can promote alternatives, capable to consider the nutrition in its broader meaning (Schieck Valente F.L., 2015). This desire for change can therefore be considered as the first useful piece in the re-evaluation of the concept of food and nutrition that should no longer be considered as a commodity in the hands of Transnational Corporations (TNCs), but rather as a real right of the humans. For this reason, the right to food can be recognized in several international instruments that may be legally binding or non-binding (FAO, 2014).

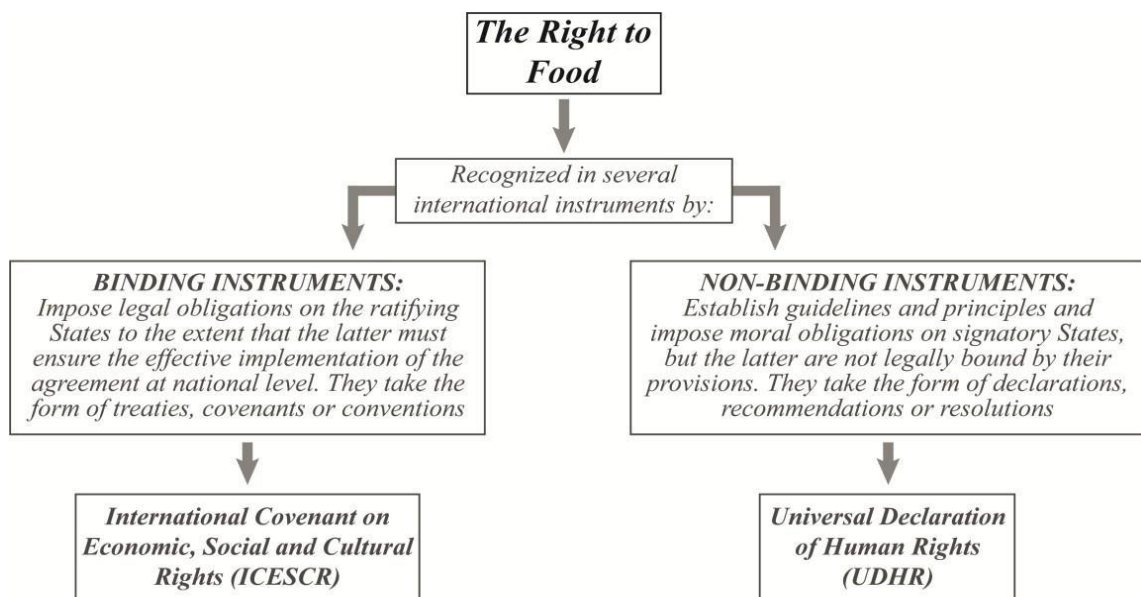


Figure 2 - Binding and Non-binding Instruments related to the Right to Food. Source: own elaboration from: (FAO, 2014)

Key steps in the development of the Right to Food

In order to talk about the right to food intended as a human right, it is necessary to look firstly at what human rights are. Human rights, in general terms, are regarded as fundamental and inalienable claims or entitlements which are essential for life as human beings. More precisely, we can define human rights as a social construction resulting from the millenary struggles of individuals and social groups against exploitation, oppression, discrimination and abuse of power by State and non-State actors. Moreover, human rights are a set of principles and rights, an aspiration and a demand, coming out from these struggles, for a better society in which human dignity, integrity, freedom, and equity reign. At the same time, human rights offer a framework in which individuals are rights-holders, while States are the duty-bearers: those who have their rights violated can be identified as well as those who abuse their power

Generally, the history of human rights is a long one, but contemporary concern with the protection of them arose as a reaction to the atrocities of the World War II: it is only in the post-war period that emerged the idea of defining a world standard for human rights, in order to ensure the establishment of a peaceful world order (Zanghì C., 2002). The turning point in this human rights approach came with the so-called "*Four Freedom Speech*" given by Franklin Delano Roosevelt, the President of the United States of America at that time, during his annual message to Congress on the State of the Union in January 1941. According to Roosevelt, there are four essential human freedoms which are: *i*) freedom of speech; *ii*) freedom of faith; *iii*) freedom from need; *iv*) freedom from fear. These freedoms, as Roosevelt declared, must triumph everywhere in the world, and act as a basis for a new moral order (Roosevelt F.D., 1941).

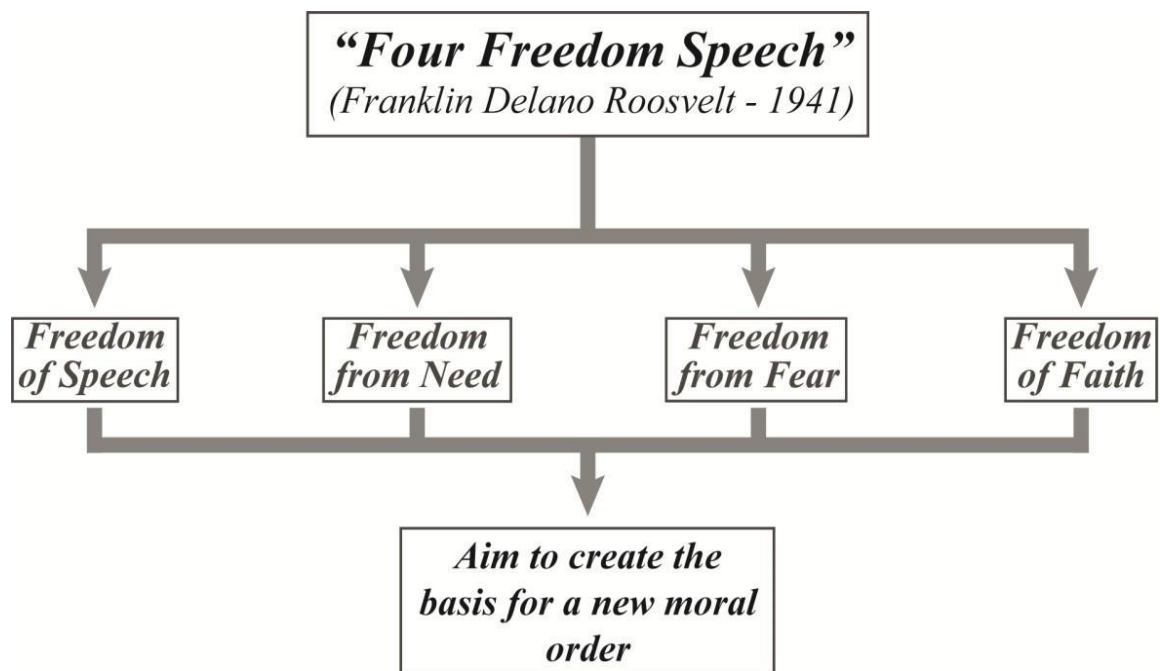


Figure 3 - Four essential Human Freedoms. Source: own elaboration from: (Roosevelt F.D., 1941)

Following the end of the war, the Four Freedoms played an important role in the proclamation of the Universal Declaration of Human Rights (UDHR), adopted by the General Assembly on 10 December 1948. The UDHR today exerts a moral, political, and legal influence far beyond the hopes of many of its drafters. The Declaration, indeed, comprises in one consolidated text nearly the entire range of what today are recognized as human rights and fundamental freedoms.

It is properly among these rights that the right to food has been formally recognized for the first time by the UN in the UDHR, as part of the right to an adequate standard of living⁵. Article 25.1 states that “Everyone has the right to a standard of living adequate for the health and well- being of himself and of his family, including food, clothing, housing [...]” (UN General Assembly, 1948). This was just the initial step towards the evolution of the right to food. Indeed, due to the fact that it was meant to be initially an expression of ideals to be achieved, the UDHR does not have the legal status of a treaty, thus it does not contain legally binding obligations. Therefore, after the adoption of the UDHR, the next step was to translate these rights into binding treaty obligations.

States’ Obligations: to Respect, Protect and Fulfil

In the specific case of the right to food, the process of positivization of the right at the international level has started with the International Covenant on Economic, Social and Cultural Rights (ICESCR). The ICESCR was drafted over a period of twenty years, was adopted in 1966, and entered into force on 3 January 1976. Article 11 of the Covenant codifies the right to an adequate standard of living, including the right to food, and recognizes the fundamental right to be free from hunger⁴. Due to its full breadth and depth, Article 11 has provided the Committee on Economic, Social and Cultural Rights, as well as other UN bodies, with particular challenge in terms of giving clear guidance to States on how to interpret and, subsequently, realize the right to food, and what are the best way in practice to tackle hunger.

Indeed, the scope of Article 11 is immense and its content is separated into two distinct parts. In the first paragraph, it imposes that States must recognize and take steps to ensure the realization of the right to an adequate standard of living for individuals and families, and to the continuous improvement of living conditions. It specifies as well that such a standard of living includes adequate food, clothing and housing. In the second paragraph, the Article puts its emphasis on the importance of combating hunger and recognizing the “*fundamental right of all to be free from hunger*”⁵. To this purpose, States should take all the appropriate measures and adopt programs in order to reach specific goals. Both in the first and in the second paragraphs, it is indeed underlined the importance of the international community as a whole to cooperate, coordinate and seek consent to help States implement the right. It is also important to underline that several non-legally binding international human rights instruments, including recommendations, guidelines, resolutions or declarations, are also relevant to the right to food. These are

⁴ According to Asbjørn Eide in his book “*Economic, Social and Cultural Rights as Human Rights*”, during the transformation of the provisions of the Declaration into legally binding obligations, the UN General Assembly adopted in 1966 two separate International Covenants that together constitute the foundation of the international normative regime for human rights.

⁵ Source: <https://www.ohchr.org/en/professionalinterest/pages/cescr.aspx> - visited on 28th July 2020

called "*soft-law*" instruments: they are accepted by States and serve as guidance for the implementation of the right to food.

As with all human rights, the greatest challenge with respect to the right to food is finding the most effective ways to implement the right itself. In other words, it is necessary to understand how the right can be implemented at a national level and how public authorities can be held accountable for their action, or inaction. Therefore, rights require correlative duties and these are not spelled out in great detail in the main human rights instruments. Nonetheless, obligations are gradually clarified through additional, more specific instruments, and through the practice of monitoring bodies (Skogly S.I., 2007). The document dealing the most with the implementation of the right to food is the ICESCR, but it must be read in light of General Comment No. 12 (UN Committee on Economic Social and Cultural Rights, 1999) in order to clarify the specific nature of States obligations and, at the same time, to assist States parties in their implementation at national level.

Indeed, in its General Comment No. 12 the CESCR states that the right to adequate food, like any other human right, imposes three types of obligations on States parties: the obligations to respect, to protect and to fulfil (UN Committee on Economic Social and Cultural Rights, 1999). Furthermore, according to Jean Ziegler, Special Rapporteur on the right to food, to comply fully with their three levels obligations, States must also respect, protect and support the fulfilment of the right to food of people living in other countries. Governments should therefore have a responsibility to ensure that national policies do not have negative effects, directly or indirectly, on the right to food of people living in other territories (UN Commission on Human Right, 2003).

Taking into consideration the obligation to respect, States must, at the primary level, respect people's existing access to food and means of obtaining food. The obligation to respect entails, indeed, an obligation not to interfere with the enjoyment of the right. This means that any measure which results in preventing or denying, directly or indirectly, individuals or groups to provide food for themselves is prohibited. At a secondary level, States have the duty to protect individuals' enjoyment of the right to food against violations by non-state actors, including individuals, groups, corporations and other entities. The obligation to protect, therefore, generally requires the adoption and maintenance of specific legislative or other measures regulating third parties' activities so as to ensure that individuals and groups will be able freely to have access to adequate food and their enjoyment of it will not be affected negatively. When violations by non-state actors occur, the State is obliged to take appropriate measures to punish and investigate the harm caused and, when appropriate, provide effective remedy. At a tertiary level, states have the obligation to fulfil, which requires to adopt legislative, administrative, judicial and other positive measures to facilitate and provide for individuals enjoyment of the right to adequate food. Indeed, the obligation to fulfil incorporates both an obligation to facilitate, and an obligation to provide. In the words of the CESCR, the obligation to facilitate means that the States must proactively engage in activities intended to strengthen people's access to and utilization of resources and means to ensure their livelihood, including food security. Finally, the obligation to fulfil the right to food by providing food to someone will only apply at times and for people or groups unable to exercise their right to food by their own means. As a consequence, the obligation

to provide also includes the obligation to ensure, as a minimum, that no one in the country suffers from hunger (UN Committee on Economic Social and Cultural Rights, 1999).

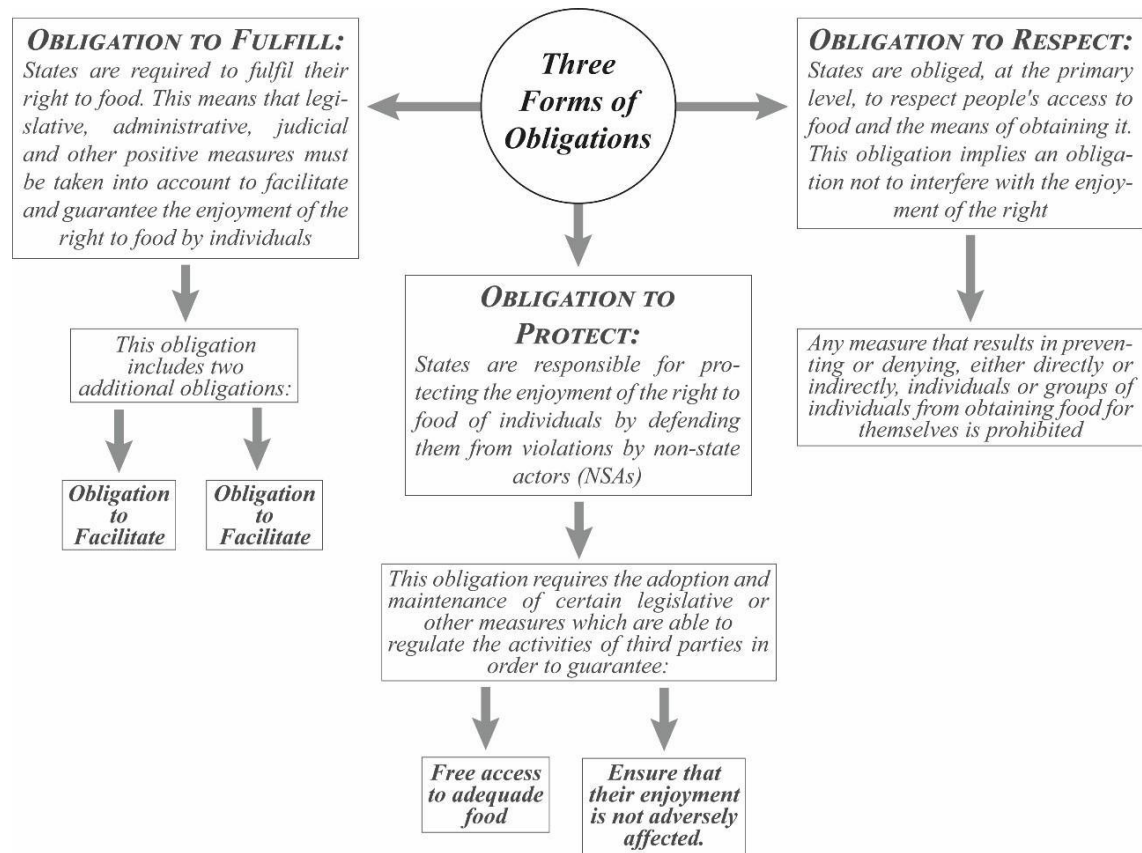


Figure 4 - States Parties' three forms of obligations. Source: own elaboration from: <https://www.un.org/unispal/document/auto-insert-187548/>

1.1.2. The Urbanization process and the consequences for food security

The future of world population is urban. We have previously seen this with the UN estimates reported in the 2018 revision of World Urbanization Prospects according to which more people live in urban areas than in rural areas: if in 1950, 30% of the world's population was urban, in 2018 the percentage rose to 55% and is expected to reach the 68% by 2050 (United Nations, 2018). As the world continues to urbanize, sustainable development depends increasingly on the successful management of urban growth.

Expansion of urban spaces reduces the land available for agricultural production, it is then clear that the phenomenon of urbanization can influence negatively the way food is produced, sold and consumed (Marzeda-Mlynarska, 2011). There is therefore a need to develop urban development policies that take people's food needs into account. The challenge of food security is too often seen as a challenge to feed the growing number of people in the world. However, our shift to a predominantly urban species has impacted the way we feed ourselves, thus defining what is not a mere question of scale, but a much wider issue (Jeannings, et al., 2015). It is therefore clear that the phenomenon of urbanization marks a profound change in the relationship between human beings and food: for the first time in history, most people consume food without having any kind of connection with its production.

How we decide to sustainably feed an increasingly urbanized world is therefore the major development challenge of our time: the more well-managed the urbanisation process, the more we will be able to meet the food needs of the urban population. Undoubtedly, rapid and unplanned urban growth threatens sustainable development, especially when the necessary infrastructures are not provided or when policies are not implemented in order to protect the environment and to ensure that the benefits of life in cities are fairly distributed and shared (DESA, 2015). Urban, peri-urban and rural food systems play a central and fundamental role in the food and nutritional security of cities. For these reasons, it is time to acknowledge that the urban environment is the critical frontier of development and has particular dynamics and cross-cutting links that need to be considered in order to understand the dimensions of urban food security (Crush & Frayne, 2010). Laurent Thomas, FAO Assistant Director of the Technical Cooperation Department, states that *“Increasing population growth and urbanization rates, especially in developing countries, call for enhanced partnerships and innovative approaches to support food systems resilient and adapted to the evolving demographic trends. [...] The Food and Agriculture Organization of the United Nations will help its Members and their partners to make strategic use of its capacities in order to address the challenges of feeding the cities and feeding the nations, working both in rural and urban settings”* (FAO, 2011). Based on this statement, the second part of this section will investigate how this rapid urban growth is affecting the four dimensions of food security (food availability, food stability, food utilization and food access).

Demographic growth on global scale

The process defined as "urbanization" is nowadays one of the main drivers of change in world. If this phenomena, on the one hand, will assume different forms and dynamics in different geographical regions, on the other hand, emerges an ever increasing majority of humanity will probably live inside urban areas (Jeannings, et al., 2015). In support of this thesis, World Urbanization Prospects says that in 2018, about 55% of the population lived in urban areas, while the remaining 45% occupied the rural areas.

Tabel 1 - Population of the Urban and Rural Areas in 2018. Source: own elaboration from: <https://population.un.org/wup/Download/>

Population of Urban and Rural Areas - 2018	
Urban (U)	4219817
Rural (R)	3413002
Total	7632819
% of U over the total population	55
% of R over the total population	45

However, an in-depth analysis of the data proposed by the United Nations, shows that the percentage of population living in urban areas has grown steadily over the years. Respectively, in 1950, urbanized people accounted for 30% of the world's population.

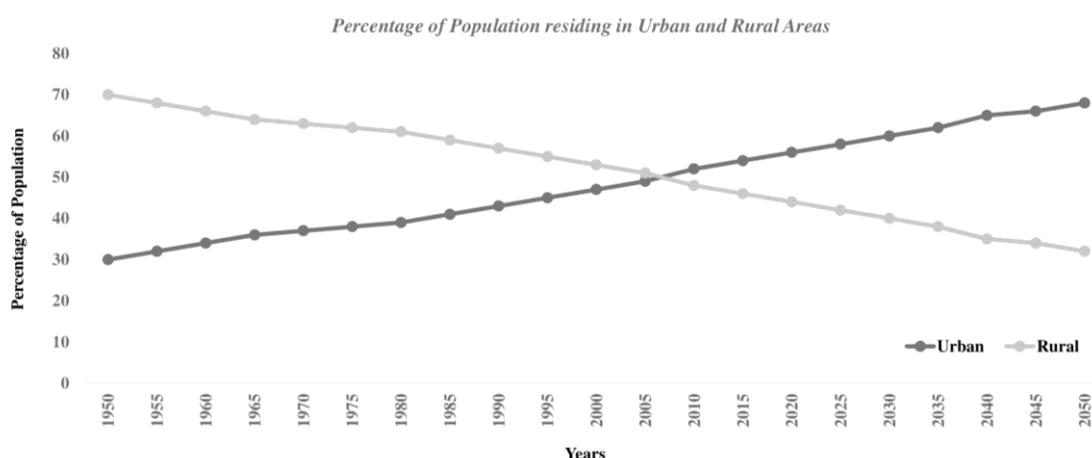


Figure 5 - Percentage of population residing in Urban and Rural Areas. Source: own elaboration from: <https://population.un.org/wup/Download/>

Nevertheless, year after year, this trend has not stopped therefore, in 2010, the proportion of urbanized population was just over 50 per cent of the world's population. Today the data are still growing and that is the reason why the United Nations through the World Urbanization Prospect of 2018, has estimated that in 2050 more than half of the world population (68%) will live in cities⁶. Although urbanization is a global trend, it is worth highlighting the main differences between "More Developed Regions" (Europe, Northern America, Australia, New Zealand and Japan) and those considered the "Less Developed Regions" (Africa, Asia, Latin America, Caribbean, Malenesia, Micronesia and Polynesia). Since 1950, as shown in the table below, the world population was present in greater numbers in Less Developed Regions (LDR) with a percentage of the total population almost equal to 70%. According to estimates and analyses carried out by the

⁶ Source: <https://population.un.org/wup/Download/> - visited on 18th august 2020

United Nations, as already said, this trend will not stop thus, in 2050, the number of people living in LDRs will reach 87% of the total world population⁷.

Tabel 2 - Population Residing in "More Developed" & "Less Developed" Regions. Source: own elaboration from: <https://population.un.org/wup/Download/>

Population residing in "More Developed" & "Less Developed" Regions					
Year	More Developed Regions (MDR)	Less Developed Regions (LDR)	Total Population	% of MDR over the total	% of LDR over the total
1950	814.865	1.721.410	2.536.275	32	68
1955	865.069	1.907.173	2.772.243	31	69
1960	917.068	2.116.145	3.033.213	32	70
1965	967.381	2.372.212	3.339.593	29	71
1970	1.009.082	2.691.496	3.700.578	27	73
1975	1.049.414	3.029.674	4.079.087	26	74
1980	1.084.244	3.374.167	4.458.412	24	76
1985	1.115.935	3.757.847	4.873.728	23	77
1990	1.146.999	4.183.944	5.330.943	22	78
1995	1.171.325	4.580.149	5.751.474	20	80
2000	1.190.505	4.954.502	6.145.007	19	81
2005	1.210.546	5.331.614	6.542.159	19	81
2010	1.235.143	5.723.027	6.958.169	18	82
2015	1.253.207	6.129.802	7.383.009	17	83
2020	1.269.277	6.526.205	7.795.482	16	84
2025	1.281.296	6.904.318	8.185.614	16	84
2030	1.289.937	7.261.262	8.551.199	15	85
2035	1.295.000	7.597.702	8.892.702	15	85
2040	1.297.496	7.912.841	9.210.337	14	86
2045	1.298.349	8.205.861	9.504.210	14	86
2050	1.298.069	8.473.754	9.771.823	13	87

Finally, the causes of rapid urban growth can be identified, until 1970, in high fertility and declining mortality. After 1970, instead, urban population growth was due, on one side, to migration from rural to urban areas and, on the other side, to the expansion of urban locations through the conversion of rural settlements into urban settlements (DESA, 2015).

⁷ Source: <https://population.un.org/wup/Download/> - visited on 18th august 2020

Linkages between food and urbanization

“*Food Security*” has been defined in 1996 during the World Food Summit⁸ by FAO, as the situation that exist when all people, at all times, have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life⁹. In this definition, however, it is possible to identify four key dimensions related to the food security of individuals.

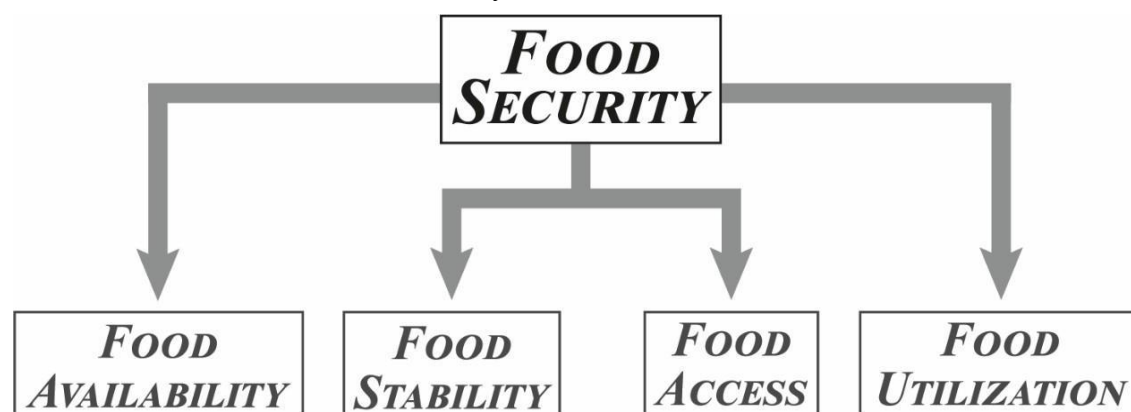


Figure 6 - Four Dimensions of the Food Security. Source: own elaboration from: <http://www.fao.org/3/a-a1936e.pdf>

However, if the urbanization process is not properly organized and well managed, it can pose a threat to each of the above dimensions of food security due to the fact that, within a city, the majority of inhabitants are food buyers and spend a large part of their disposable income in it. In 2008 the food crisis has highlighted the vulnerability of the urban poor on the one hand and the strong link between food and national security on the other. When prices of staple food crops (wheat, maize and rice) started to rise at the end of 2007, it was noted that within urbanized areas the most affected part of the population were the poor ones, whose access to food was much lower compared to the wealthiest people. According to this particular situation, if cities do not adapt to their new realities, the expected push for urbanization and population growth could further increase the vulnerability of city dwellers to sudden shocks at farmers' markets. Therefore, policy makers will need to respond to these risks by developing strategies that address urban food security (Matuschke, 2009).

Food Availability

Nowadays agriculture is often questioned to meet the demand of a growing and urbanised population. This demand will have to be met by rural and peri-urban areas but at the same time also by food imports. Nevertheless, the expansion of urban centres may limit the ability to meet new demand patterns due to many factors among which changes in land use can be identified. In doing so, the physical availability of food, which appears to be the first dimension of food security, is put at risk (Matuschke, 2009). With the

⁸ The World Food Summit (WFS) was called in response to the continued existence of widespread undernutrition and growing concern about the capacity of agriculture to meet future food needs. The Summit brought together 10 000 participants, and provided a forum for debate on one of the most important issues facing world leaders: eradicating hunger. Source: <http://www.fao.org/WFS/> - visited on 19th august 2020

⁹ Source: <http://www.fao.org/3/w3613e/w3613e00.htm> - visited on 19th august 2020

expansion of cities, it is inevitable that rural and natural areas will be replaced both by housing complexes and industrial sites. Two related examples could be identified in the city of Concepción (Chile) and Accra (Ghana). Respectively, in the South American city, the effects of urbanization have generated important negative consequences on the biodiversity of urban and peri-urban areas since 87% of the population lives in city (Pauchard, et al., 2006). In the city of Accra, however, the situation is slightly different as a high percentage of the population is dependent on agriculture but despite this, the amount of land available for agriculture is decreasing with the expansion of the city (Maxwell, et al., 2000).

Food Stability

When we use the concept of “*expansion*”, we do not refer exclusively to the phenomenon of the sprawl of urbanized areas, but rather to the need of transport and distribute the food within the cities. By doing so, inevitably more pressure will be exerted on rural infrastructure, transport technologies and food distribution systems. Therefore, as a main consequence of this scenario, the stability of food supply could be seriously jeopardised (Matuschke, 2009). Moreover, food stability describes the temporal dimension of food and nutrition security and it is given when the supply on household level remains constant during the year and in the long-term. That includes food, income and economic resources. Furthermore it is important to minimize external risks such as natural disaster and climate change, price volatility, conflicts or epidemics through activities and implementations improving the resilience of households¹⁰.

Food Utilisation

Since the 1990s, food security is no longer perceived solely in terms of the quantity of food, but a new emphasis has been placed on the state of health of the people themselves. Within this context, the urbanization process is likely to be the most influential factor in changing diets and the resulting changes in people's nutritional status (Kennedy, et al., 2004). However, the positive dimensions of urbanization on diet and health also include increased access to education and health services. Notwithstanding, it is fundamental to underline that global statistics on the nutritional status of children could not be more consistent in showing that the prevalence of undernourishment among children in urban areas is significantly lower compared to children living in rural areas. This dichotomy between the nutritional status of children is the result of the actual presence of more favourable socio-economic conditions in urban areas than in rural areas (Ruel & Garrett, 2004).

¹⁰ Source: https://wocatpedia.net/wiki/Definition_and_Dimensions_of_Food_Security#cite_note-10 – visited on 25th November 2020

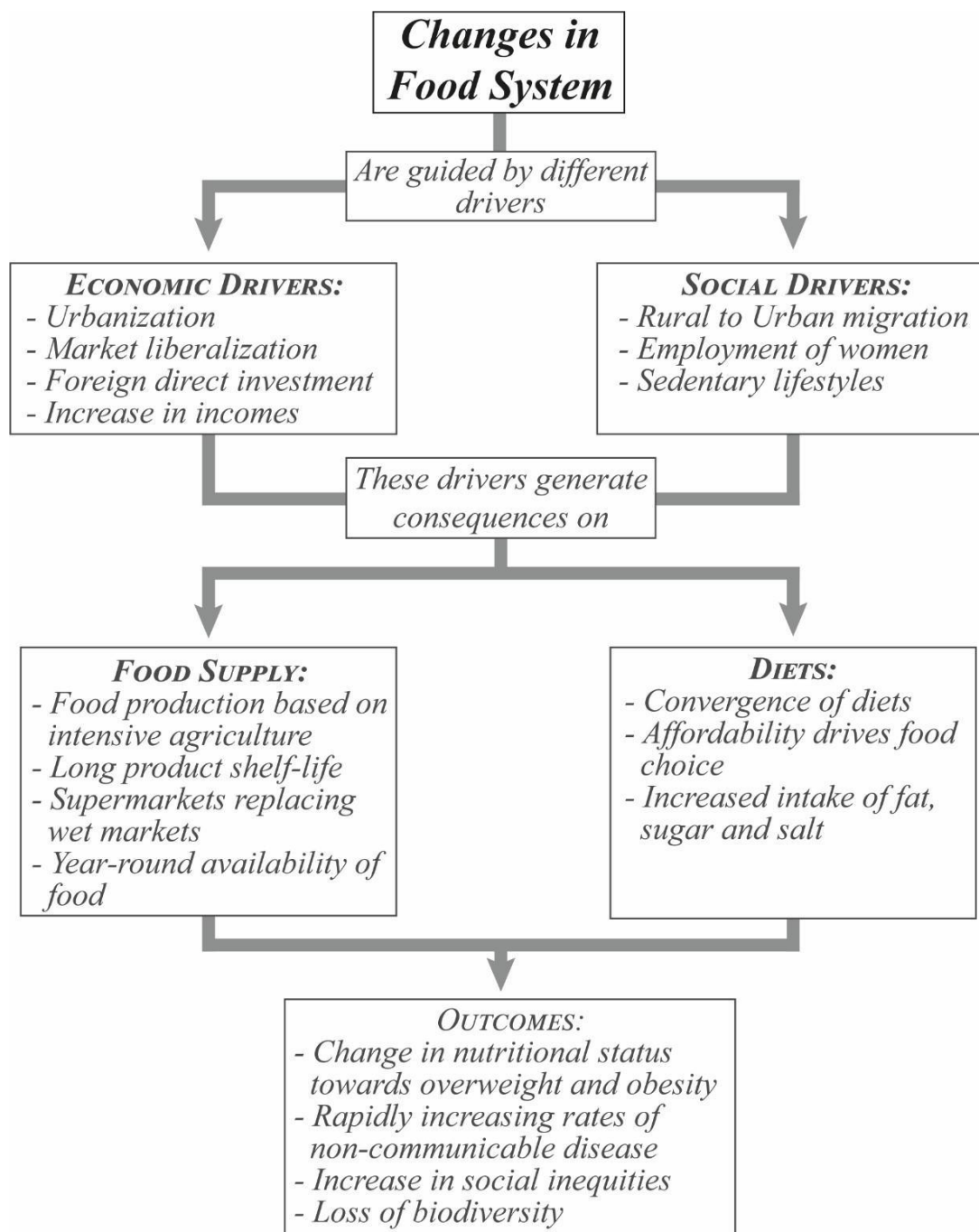


Figure 7 - Changes in Food System. Source: own elaboration from: (Kennedy, et al., 2004)

Furthermore, although urbanization seems to generate positive improvements, it also introduces some negative aspects such as dietary changes considered unhealthy due to the fact that they foresee an increase in consumption of sugars, saturated fats, salt and highly processed foods. One of the reason why urban population prefers this type of food, can be identified in the low amount of money needed to buy them. These changes, together with an increasingly sedentary lifestyle change and environmental pollution, are causing an increase in the prevalence of overweight and obese people and risk factors for a number of chronic diseases like diabetes, cardiovascular disease and cancer (Kennedy, et al., 2004).

In addition, the lack of time useful to prepare food, could be identify as a second reason why people decide to consume less nutritious food, generating as a consequence a massive expansion of convenience and fast-food options. Furthermore, another motivation for people to consume less nutritious food is that there is less and less time available to prepare food. This inevitably implies the desire and willingness to consume meals outside the home, therefore, the combination of all these factors has allowed a massive expansion of the market within which, today, we can find convenience and fast-food options (Kennedy, et al., 2004).

Food Access

Having an adequate supply of food at national or global level, does not imply that economic and physical access at family and individual level is guaranteed. Thus urban diets prove to be strongly influenced by prices and cash income and stable employment (Maxwell, et al., 2000). Another very important aspect to keep in mind when we refer to access to food, concerns the personal gain of each individual person. City dwellers are required to buy most of their food instead of growing it, so it is inevitable that people's earnings shape access to life's necessities. However, unlike in rural areas, food insecurity problems in urban areas are due to the inadequate purchasing power of poor people located in urban areas who are unable to access adequate quantities of nutritious food because of this situation.

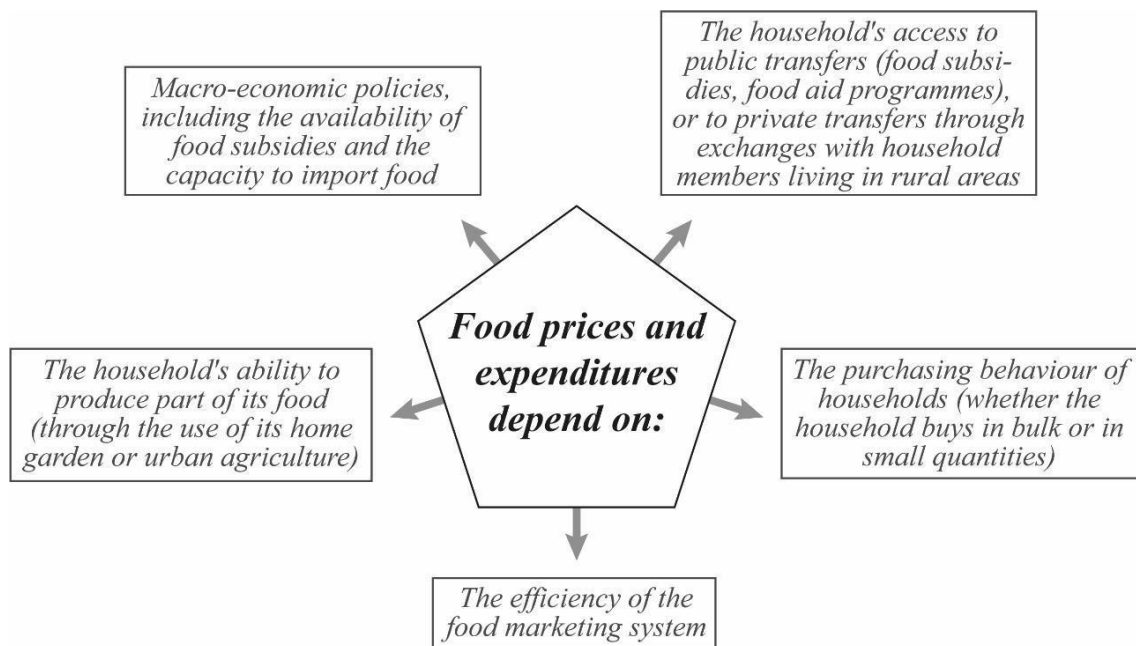


Figure 8 - Factors that influence the food prices and the expenditures. Source: own elaboration from: (Ruel & Garrett, 2004)

Food Security as a changing concept

While the right to food has been discussed since 1948 thanks to the Universal Declaration of Human Rights (UDHR), the concept of "*food security*" is not so old because it arose from the mid-seventies in the discussion of international problems in times of global food crisis. Food security has not been about food itself, but rather it expressed concern about the fulfilment of basic human needs such as food (Marzeda-Mlynarska, 2011). Since its first definition at the World Food Conference in 1974, the concept of food security has evolved, developed, multiplied and diversified into a broad, multi-layered concept. Nowadays, it is considered the primary cognitive lens through which the prevalence and complexity of world hunger issues has been noted. Moreover, the concept has received particular attention in several studies that have sought to establish a better and more comprehensive food security paradigm (Alcock, 2009). Between 1972 and 1974 a greater concern about food security began to emerge, as a succession of events revealed how unpredictable and fragile the situation of world food security was. However, this period of crisis came at a time when the food situation on a global scale had improved over the previous two decades, leading to an increase in production and an increase in per capita production of 22% (Shaw, 2007). Nevertheless, according to John Shaw, a radical change occurred in 1972 when, for the first time in over twenty years, global food production began to decline. Confronted with this growing global food crisis, the first World Food Conference (1974) focused on the problem of global production, trade and stocks in order to formulate an international cooperation programme that would overcome the growing shortage of food and other commodities and keep prices stable.

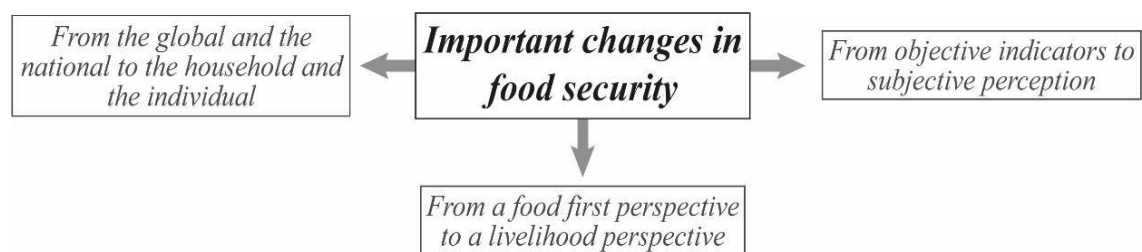


Figure 9 - Important changes in food security since its first recognition. Source: own elaboration from: (Maxwell, 1994)

With the beginning of the 1980s, thanks to Amartya Sen, it was possible to start a process of change of paradigm towards a new comprehension of food security. Sen was strongly opposed to the theory that food insecurity was the result of lack of food availability since he demonstrated that the food security of individuals depends mainly on their ability to access food (Sen, 1981). The originality of the approach proposed by the Indian economist was to focus on the situation of the most vulnerable groups in society, demonstrating that individual food security can be clearly limited despite sufficient domestic supplies. In doing so, it became clear that not so much the availability of food but rather poverty and lack of access cause food insecurity. This approach has been useful as it has helped to redirect the problem of hunger and famine by giving greater importance to people's socio-economic conditions (Burchi & De Mauro, 2015).

Subsequently, in 1983, the FAO revised and expanded the concept of food security, generating a definition based on the balance between the supply and demand sides of the food security equation. Within this new definition, food security was defined and focused on “*Ensuring that all people at all times have both physical and economic access to the basic food that they need*” (FAO, 2006). Analyzing this definition in detail, having “*both physical and economic access*” means that having sufficient food per capita at national level is therefore a necessary condition for security, but not a sufficient one. On the contrary, food security requires that people have ready access to food by buying it, growing it themselves, or taking advantage of a public food distribution system (UNDP, 1994)

In the mid-1990s, a further step was taken in the process of broadening the definition of food security as it was recognized as a significant concern, ranging from the individual to the global level. This change is due to the fact that, for too long, the concept of food security has been interpreted narrowly, and moreover, it has been related more to nation states than to people (UNDP, 1994). In 1994, with the adoption of the Human Development Report, the United Nations Agency adopted a broader perspective that equates security with people rather than territories, development and arms. The main objective of this Report, therefore, was to address these concerns through a paradigm focused on sustainable human development leading to human security.

Referring to food security, it can be seen that the Report once again stresses that food security not only requires a sufficient amount of food but that all individuals have access to food. Global food availability in the world does not appear to be a problem because food production has also increased in developing countries. Despite this, not all uses benefit from this situation so the real problem seems to be poor food distribution and lack of purchasing power (UNDP, 1994). Later in 1996, at the hands of FAO President Jacques Diouf¹¹, a proposal was made to hold a World Food Summit (WFS) as he claimed that food had not yet been distributed fairly as some regions were producing more than they should while others, including sub-Saharan Africa, were not. Concern was also expressed as to what was the real purpose of the summit so, on this point, the United States pointedly recalled that the WFS was designed to examine realistic approaches to food security and that, in so doing, its primary purpose was to address the long-term challenge of global food security (Shaw, 2007). It was only on this occasion that the definition of food security most widely used today was reached. According to John Shaw, the difference between the first definition adopted in 1974 and the one we refer to today is simply that the first was “*erroneously*” equated to the global food problem, while the second took into account the complexity of food security as an all-encompassing, multifaceted and multi-sectoral concept (Shaw, 2007).

¹¹ Jacques Diouf has been elected first African Director General of the Food and Agriculture Organization of the United Nations (FAO) on 8 November 1993 and he remains in charge until 31 December 2011. Source: https://en.wikipedia.org/wiki/Jacques_Diouf - visited on 20th august 2020

1.1.3. The Globalization process and its effect on food

The term "*globalization*" refers to the growth of the dimensions related to social systems, on the one hand, and it represents an increasing complexity of inter-corporate links, on the other. In some ways, the process of globalisation can be seen as a "*bridge*" that allows the connection between the past, the present and the future. Despite of this, globalization appears to be a very broad concept not only with regard to the diversity of regions, cultures and actors, but also with regard to the different analytical approaches that are used to study it (Sheffield, et al., 2013).

In the last twenty years there has been a slow but inexorable change in the world's food systems which, by transforming from an initial locally coordinated network of producers and consumers to a globalised trading system, have enabled both social and spatial links between places of production and places of consumption (Raynolds, 2004). In this regard, it is inevitable to point out how the forces of globalization (market and trade liberalization, capital flow and urbanization) have changed the nature of food systems all over the world, by increasing the variety and accessibility of food, but changing its quality and nutritional values at the same time. Therefore, it is important to highlight that access to healthy and nutritious food is not universal as many individuals, especially in developing countries, struggle to find and afford nutritious foods such as fresh fruits and vegetables (Black, 2016). According to Barry Popkin, the rhythm of food change seems to have accelerated progressively, generating different consequences in different regions of the world. These changes are included within the concept of "*food transition*" that represent a process focused on changes in diets and activity patterns, with the aim of studying their particular structure and overall composition (Popkin, 2006). A negative aspect of this food transition is the increasing tendency of individuals to consume processed foods rich in fat, sugar, salt and other substances harmful to humans (Bruce, 2017). However, within the globalization process of the food sector, a central role is played by the food-related Transnational Corporations (TNCs) which, thanks to substantial investments within the food industry, are able to control food at every stage: from cultivation to purchasing, through processing and distribution (Phillips, 2006).

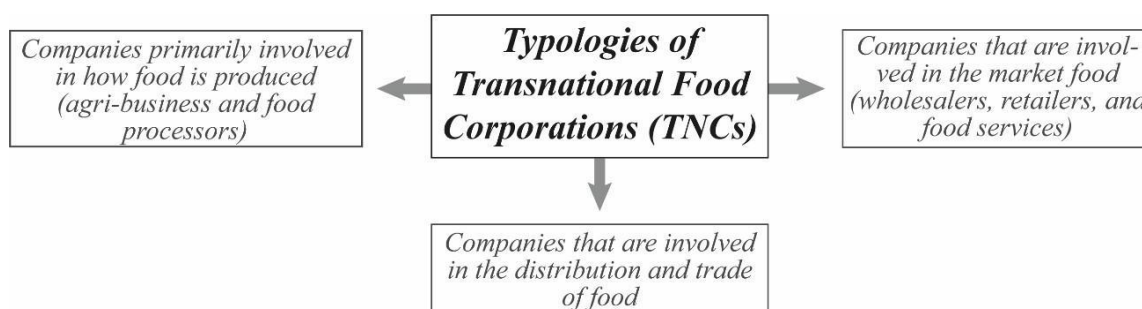


Figure 10 - Typologies of TNCs. Source: own elaboration from: (Phillips, 2006)

The relationship between dietary change and industrial change, has led to a common view that there is a relationship between globalization and an increase in the intake of highly processed and energy-dense convenience foods. This may lead to demands to influence the nature of globalization or the behaviour of global companies (Hawkes, 2006). In this regard, within this section of the first chapter, the theme of food globalization and more specifically the impacts of the increasing prevalence of processed food products in response to a growing trend towards urbanization will be analysed.

In particular, in the first instance, the main milestones that gave rise to the phenomenon have been identified. Successively, an attempt has been made to go deeper into the theme of globalization, focusing on the role and function that multinational companies play within the various food systems and finally it has been sought to provide a general overview of how the globalization process in the food industry negatively affects food safety and nutrition through the availability and consumption of nutrient-poor foods.

The origins of Food Globalization

The development of the foundations of what we consider today's food globalization, go back to the origins of agriculture itself as various archaeological and anthropological studies have shown how the domestication of plants and animals and the birth of societies, based on agriculture and livestock farming, have developed since about 10,000 years ago, in different regions of the world (Diamond, 2014). Nevertheless, the geography of current food production has few features in common with the original domestication and the first spread of many edible plants (Pettenati & Toldo, 2018). The stabilization of agriculture has led to the creation of complex political structures, with the acquisition of even very distant territories by some peoples and the development of stable commercial networks. These are the main reasons why the food movement, through trade, stopped being linked exclusively to the movement of migrant populations, to become one of the pillars of the political and commercial strategies of mainly sedentary societies (Pettenati & Toldo, 2018).

With the beginning of the colonial era and the birth of the first plantations in some parts of the Americas, the embryo of the development of a global system of relationship between food production, exploitation of the workforce and appropriation of a value produced in the "*geo- economic*" peripheries by a political and economic power concentrated in the most developed countries began to form (Pettenati & Toldo, 2018). Nevertheless, the conquest of the American continent by the Spanish and Portuguese powers generated, albeit very slowly, changes in the eating habits of the European populations since American products, like potatoes and corn, began to be introduced the diets of the European populations. As a consequence, the production and exchange of agricultural and food products became a central component of a system of political and commercial relations between different territories and determined, at first, by colonial imperialist policies and later by capitalist and neoliberal market forces (Pettenati & Toldo, 2018).

Within this system, the dependence of unbalanced power relations, between the countries of the Global South and Global North, clearly emerges but, above all, the growing role of very few urban centres in which the political, economic, social and cultural powers on a global scale resided. With regard to this vision, the historian of the US economy Walt Whitman Rostow in 1960 introduced one of the first explanatory models through which he highlighted "five stages of development" which he believed were obligatory phases of a country's evolution from backwardness to modernity (Rostow, 1960). During the 1960s and 1970s, the model introduced by Rostow was strongly criticized by those who supported the so-called "addiction theory" formed in

Latin America. The supporters of this theory opposed themselves to the idea that states support each other along a common path of modernization and development, believing, on the contrary, that the underdevelopment of some parts of the world was functional to support the world capitalist system that needs centres and peripheries (Pettenati & Toldo, 2018).

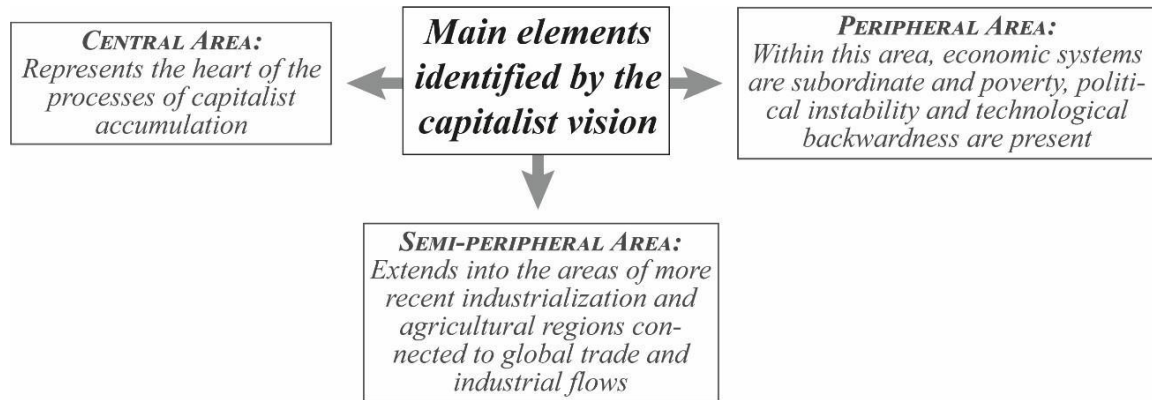


Figure 11 - Elements identified by the capitalist vision. Source: own elaboration from: (Pettenati & Toldo, 2018)

The process of globalisation of the agro-food system appears to be strongly linked to the gradual incorporation of agriculture into the global dynamics of capitalist accumulation, whose main features are the increasing liberalization of international trade of agricultural and food products and the emergence of an international division of labour in the agro-food sector (Atkins & Bowler, 2001). However, within this context, an important role in regulating food-related issues has been covered by international institutions (Morgan, et al., 2006).

According to this, a central position in these processes has been, and continued to be, held by international trade agreements in particular GATT¹², whose aim is to promote and liberalise trade, and by the action of supranational organisations such as the World Trade Organization (WTO)¹³ and the Food and Agriculture Organization (FAO). The first policies and interventions that have influenced the processes of globalization of food systems are those related to free trade at macro-regional and global level, which began in 1948 with the signing of the GATT, and intensified in 1995 with the establishment of the WTO and the first agreements on the liberalization of agricultural products (Morgan, et al., 2006).

For a long time, international free trade policies have in fact excluded agricultural products due to the specificity of agriculture and its centrality with respect to issues of national social and economic organization of states (Pettenati & Toldo, 2018). Nevertheless, at macro- regional level, many free trade agreements have been signed that also included agricultural products, such as NAFTA¹⁴ and the European Union's free trade

¹² The GATT (General Agreement on Tariffs and Trade) is the General Agreement on Tariffs and Trade, concluded in Geneva in October 1947. This agreement has the aim of laying the foundations for the liberalization of international trade and the creation of an international organization to regulate it. Source: https://www.wto.org/english/tratop_e/gatt_e/gatt_e.htm - visited on 22th august 2020

¹³ The World Trade Organization (WTO) is the only global international organization dealing with the rules of trade between nations. The goal is to ensure that trade flows as smoothly, predictably and freely as possible. Source: https://www.wto.org/english/thewto_e/thewto_e.htm - visited on 22th august 2020

¹⁴ North American Free Trade Agreement (NAFTA) is a controversial trade pact signed in 1992 that gradually eliminated most tariffs and other trade barriers on products and services passing between

area. Alongside states and major intergovernmental organisations, multinational companies have also played a key role in the governance process of the global food system. These companies control the global food value chain, but above all they are able to guide food policies, consumer choices and food safety (Hendrickson & Heffernan, 2002).

The role of food-related Transnational Corporations (TNCs)

Throughout human history, traditional food systems and dietary patterns have been strongly intertwined with social, cultural and economic life and personal, communitarian and national identity. Although these long-established dietary models are not ideal from a nutritional point of view, they can be improved by defining changes that respect traditions, cultures but above all national and local resources. However, these policies and changes initiated by transnational food and drinks corporations, whose products are mostly ultra-processed, are progressively shifting and modifying traditional food systems around the world (Monteiro & Cannon, 2012). The process of economic globalization, systematic privatization and unregulated capital flows, have shifted the balance between the governments of countries and multinationals. For this reason, today, governments and international institutions tend to give up on their first duty, that is defending the public interest giving it to large transnational corporations whose primary responsibility is that of their shareholders. The most prevalent political, economic and commercial practices have therefore allowed these leading companies in the food and beverage sector the freedom to expand beyond national borders, thus becoming true giants that are frequently also defined by the term "*Big Food*"¹⁵ (Monteiro & Cannon, 2012). These transnationals corporations, are active in the entire food chain as they control every single stage, from production to distribution and consumption, of food (Pettenati & Toldo, 2018). Another aspect that characterizes these giants of the food industry is certainly their annual turnover since the latter is equivalent to the Gross Domestic Product (GDP) of medium-sized countries (Monteiro & Cannon, 2012).

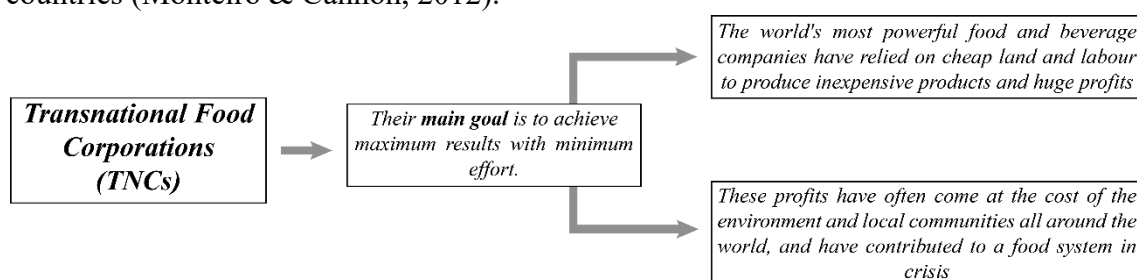


Figure 12 - Main goal of the Transnational Food Corporations (TNCs). Source: own elaboration from: (OXFAM, 2013)

the United States, Canada, and Mexico. Source: <https://www.britannica.com/event/North-American-Free-Trade-Agreement> - visited on 22th august 2020

¹⁵ The term "*Big Food*" refers to the transnational and other large corporations that increasingly control the production and distribution of ultra-processed products throughout the world. Source: (Monteiro & Cannon, 2012) visited on 23rd august 2020

According to research conducted by OXFAM¹⁶, the ten largest multinational companies in the agri-food sector collectively generate revenues in excess of \$1.1 billion per day for a total capital of \$7 trillion equivalent to almost 10% of the entire global economy (OXFAM, 2013).

Tabel 3 - The first 10 Transnational Food and Drinks Corporations within the Global Food Industry. Source: own elaboration from: (Pettenati & Toldo, 2018)

Transnational Food Corporations within the Global Food Industry				
Company	Country	Annual Revenue (mld/\$)	Workers	Controlled Companies
<i>Associated British plc</i>	<i>UK</i>	<i>21.1</i>	<i>112.652</i>	<i>Twinigs, Kingsmill, Jordans</i>
<i>Coca-Cola Company</i>	<i>USA</i>	<i>46.9</i>	<i>130.600</i>	<i>Ovomatina, Fanta, Sprite, Minute Maid, Powerade</i>
<i>Danone S.A.</i>	<i>France</i>	<i>29.3</i>	<i>104.642</i>	<i>Evian, Badoit, Activia</i>
<i>General Mills Inc.</i>	<i>USA</i>	<i>17.9</i>	<i>43.000</i>	<i>Haagen-Dasz, Cheerios, Fitness</i>
<i>Kellog Company</i>	<i>USA</i>	<i>14.8</i>	<i>30.227</i>	<i>Pringles</i>
<i>Mars</i>	<i>USA</i>	<i>33</i>	<i>60.000</i>	<i>M&Ms, Orbit, Uncle Ben's, Wrigley</i>
<i>Mondelez International Inc.</i>	<i>USA</i>	<i>35.3</i>	<i>107.000</i>	<i>Cadbury, Oreo, Ritz, Philadelphia, Milka, Toblerone</i>
<i>Nestlé S.A.</i>	<i>Swiss</i>	<i>103.5</i>	<i>333.000</i>	<i>San Pellegrino, Nescafé, Buitoni, Maggi, Kit Kat</i>
<i>PepsiCo Inc.</i>	<i>USA</i>	<i>66.4</i>	<i>274.000</i>	<i>Pepsi, Lay's, 7Up, Quaker</i>
<i>Unilever</i>	<i>UK, Holland</i>	<i>68.5</i>	<i>174.381</i>	<i>Lipton, Knorr, Calvè, Algida, Bertolli</i>

If on the one hand these giants, by monopolizing the entire food industry, are able to control every single stage of the food chain as well as the quality and type of food we eat, on the other hand they claim to want to work both in the public and private interest and to protect the public health of individuals. In a particular way, TNCs have presented themselves as the solution to the uncertainty surrounding the nutrition of an increasingly growing population, claiming to have the resources useful to innovate and harness efficiency to provide sustainable food security (Scott, 2015). Moreover, one of the most interesting and most used practices by transnational companies refers to the amount of business, marketing and advertising strategies they use to exercise their dominance in the food industry.

According to FAO, marketing activities and advertising promotions play a key role in the adoption of new foods in the diet. The advertising and marketing budgets of the world's largest food companies can far exceed national spending on education and health promotion. Furthermore, the saturation of markets in developed countries, has stimulated Big Food to seek global expansion in low- and middle-income countries. For this reason, the campaigns of what is defined as "mass-marketing", together with foreign investment,

¹⁶ Oxfam is a global movement of people whose main objective is to fight against inequality in order to defeat the causes that make and keep people poor. Source: <https://www.oxfam.org/en> - visited on 23rd august 2020

have played a key role in the global expansion and permeation of the domestic market (Stuckler & Nestle, 2012). The marketing process, therefore, can be defined as an integral part of globalization as it accelerates the availability, idea and variety of food products. Three different processes of this globalization of food marketing can therefore be identified: *i)* globalization of Big Food and the products promoted by them; *ii)* globalization of advertising and marketing agencies whose aim is to promote food products; *iii)* globalization of communication technologies (Hawkes, 2006). As final consideration, the trend of advertising and mass marketing is fundamental in determining what we eat but above all how much we eat. Consequently, the call to be “modern” by consuming foods included in Westernized diets, is growing and multinationals are more than aware of this (Black, 2016).

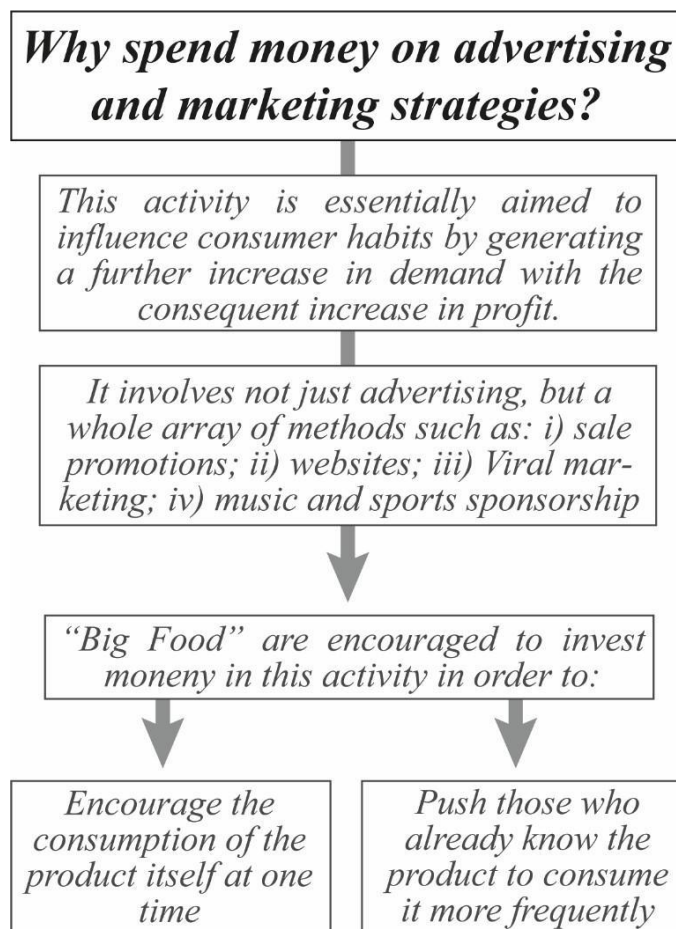


Figure 13 - Advertising and marketing strategies of the Transnational Corporations. Source: own elaboration from: (Hawkes, 2006)

Processed Food and Human's health

The birth of de-territorialized food systems, guided by mainly economic logics less and less linked to the social, cultural and environmental realities in which they are articulated, can be attributed to three different prevailing forces: *i)* disconnection between producers and consumers increasingly distant from the places of production and who have increasingly formalized and anonymous relationships with those who produce food; *ii)* separation of food from their respective places of production; *iii)* disarticulation between the stages of the supply chain (Wiskerke, 2009). The changes that have influenced the global food system on the one hand, and the different diets it contains on the other, have not occurred instantaneously but are the result of gradual shifts over the years in government investment, trade, infrastructure, international relations, urbanization and changes in production systems (Black, 2016). The most important change occurred within the food system, was designed to make calories from staples, such as wheat, corn and rice, cheaply available, in order to simultaneously address hunger in low and middle-income countries, and national food insecurity in high-income countries (Anand, et al., 2015).

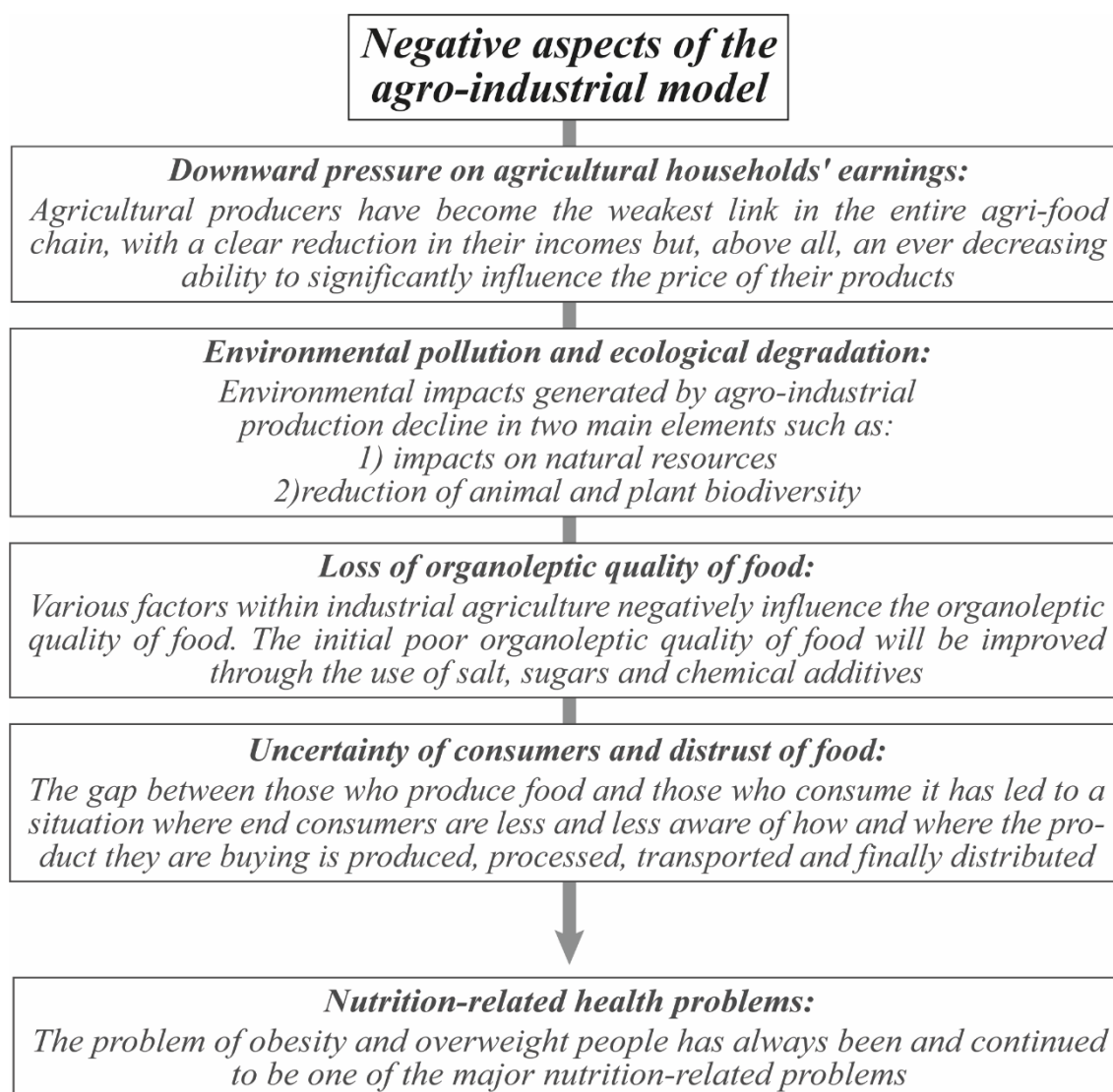


Figure 14 - Negative aspects of the Agro-Industrial model. Source: own elaboration from: (Pettenati & Toldo, 2018)

The difference between the old food system and the new one is based on the fact that, the old one, was focused on the production of small local producers while the current food system is characterized by the presence of multinationals corporations whose goals are to maximize efficiency, reduce costs, increase production and attract as many consumers as possible (Black, 2016). In parallel to food systems, diets have also undergone significant changes, therefore, comparing traditional diets with modern ones (also known as "*Western diets*") it can be seen that the former, mainly present in developing countries, were mainly based on the consumption of whole grains (millet and barley), foods rich in fiber, fruits and vegetables. The second ones, instead, were based on the consumption of refined cereals and carbohydrates, animal products, unhealthy fats, salt and sugars (Popkin, et al., 2012). Moreover, there are two important phenomena that allow to better describe the changes in diets: "*Dietary Adaptation*" and "*Dietary Convergence*".

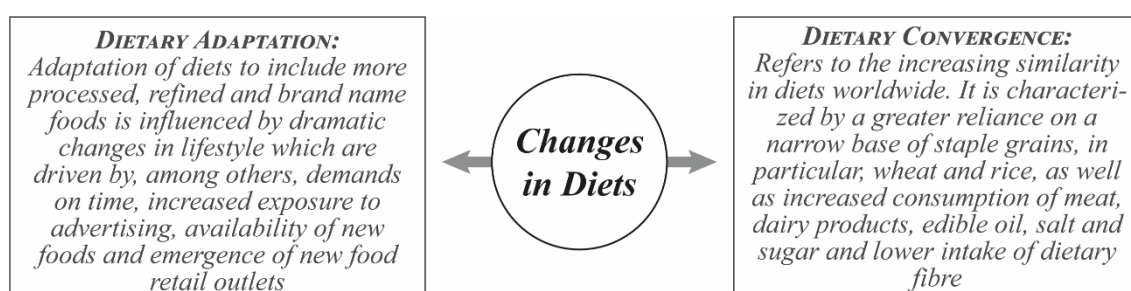


Figure 15 - Phenomena that allow the changes in diets. Source: own elaboration from: (Kennedy, et al., 2004) and http://www.fao.org/newsroom/en/focus/2004/51786/article_51797en.html

Most of the time, people choose to consume processed foods rich in fat and sugar from modern diets, even though they are much less nutritious and more harmful to their health. If, on the one hand, processed foods are more affordable and more attractive due to their low cost, on the other hand, nutritious foods such as fruit and vegetables are the exact opposite because their high prices make them less attractive to the population (Popkin, et al., 2012). On the long run, this process takes on the characteristics of a cycle because unhealthy foods are more easily produced and thus generate an increase in consumer demand, so multinationals are required to meet their customers' needs through increased production. As a consequence, dietary patterns and the global food market continually reinforce one another (Black, 2016).

The spread of unhealthy food diets because of globalisation and the resulting concentration of processed foods within the food market can be considered as the two leading causes of malnutrition and the increase in non-communicable diseases (NCDs). Furthermore, NCDs generate side effects at three different levels: *i*) household; *ii*) national; *iii*) global. Respectively at the household level, there are lower incomes, higher health care costs and a high probability of impoverishment. At national level, instead, there will be lower productivity and competitiveness, higher health and welfare expenditures and a potential missed opportunity for the demographic dividend that lifted the fortunes of many higher-income countries. Finally, at the global level, the consequences of NCDs would be so exorbitant that the World Economic Forum report states that non-communicable diseases will cost 30 trillion dollars and pushing millions of people below the poverty line (World Economic Forum, 2011).

1.2. Food, Sustainable Development Goals (SDGs) and Urban Agenda

In the previous paragraphs, the evolution of the concept of food and the main stages that have allowed it to move from an initial concept of commodity to a fundamental element of human rights have been analysed in detail. However, despite the fact that the right of individuals to adequate food has become increasingly important, problems still emerge today that require constant attention, continuous interventions and effective strategies aimed at eliminating them. The first of these two problems is the fight against hunger, which has been threatening both developing countries, the so-called Global South, and the more developed ones such as those located in the Global North. In this regard, in this second section of this chapter two very important documents, both drafted by the United Nations and having worldwide validity, will be analysed. The first document taken into consideration will be the Agenda 2030 for Sustainable Development, drafted in September 2015 during a meeting of the General Assembly of the United Nations. Within this document, 17 objectives have been defined, each of which seeks to apply the human rights of all individuals in order to achieve equality, promote prosperity and protect the environment (United Nations, 2015). In particular, of all the objectives present, only the second will be analysed in detail due to the fact that it refers to the fight against hunger (Goal 2). Subsequently, the second important document that will be examined is the New Urban Agenda, which was adopted by the United Nations in Quito in 2016. This Urban Agenda represents a shared vision for a better and more sustainable future. The idea behind this document, argues that if well planned and well managed, urbanization can become a powerful tool for sustainable development for both developed and developing countries (United Nations, 2016).

1.2.1. The Agenda 2030 and its Sustainable Development Goals (SDGs)

Back in September 2015, the United Nations (UN) adopted a new global development framework called "*Agenda 2030 for Sustainable Development*". Within this document were included 17 main goals and 169 subordinate objectives with the primary aim of offering guidelines, both at national and global level, to be followed in order to make international development more sustainable within 15 years. These SDGs have replaced the initial Millennium Development Goals (MDGs) formulated between 2000-2001 which had to be achieved by all member states by 2015. There are essentially two conceptual differences between the MDGs and the SDGs. Primarily, the SDGs are universal goals that aim to control the national policies and international cooperation of all UN member states. On the other hand, MDGs are much more comprehensive in scope, thus they focus more on improving some specific dimensions of poverty such as extreme income poverty, nutrition, education, health, gender equality and access to water and sanitation.

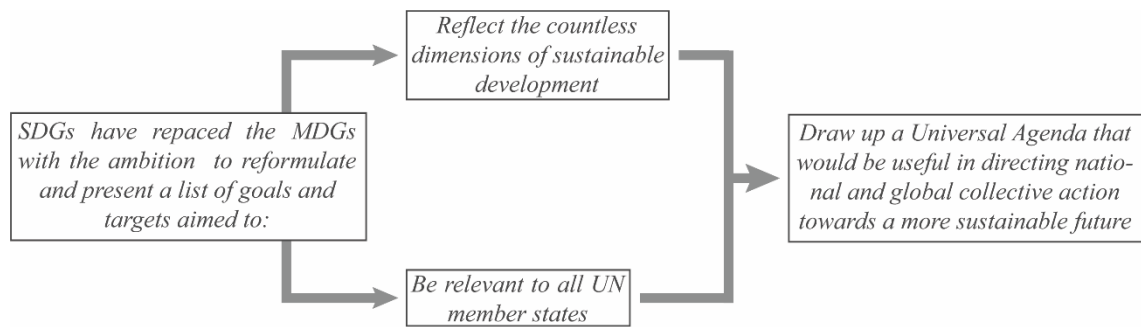


Figure 16 - Ambition of the Sustainable Development Goals (SDGs). Source: own elaboration from: (Scholz, 2015)

However, it is also important to remember that the SDGs, by expanding the Agenda itself, include: *i)* economic issues such as industrialization, infrastructure and labour markets; *ii)* environmental issues such as climate change, climate protection and water protection; *iii)* governance issues such as justice for all, inclusive responsibilities and institutions; *iv)* systematic aspects of global cooperation (Scholz, 2015)

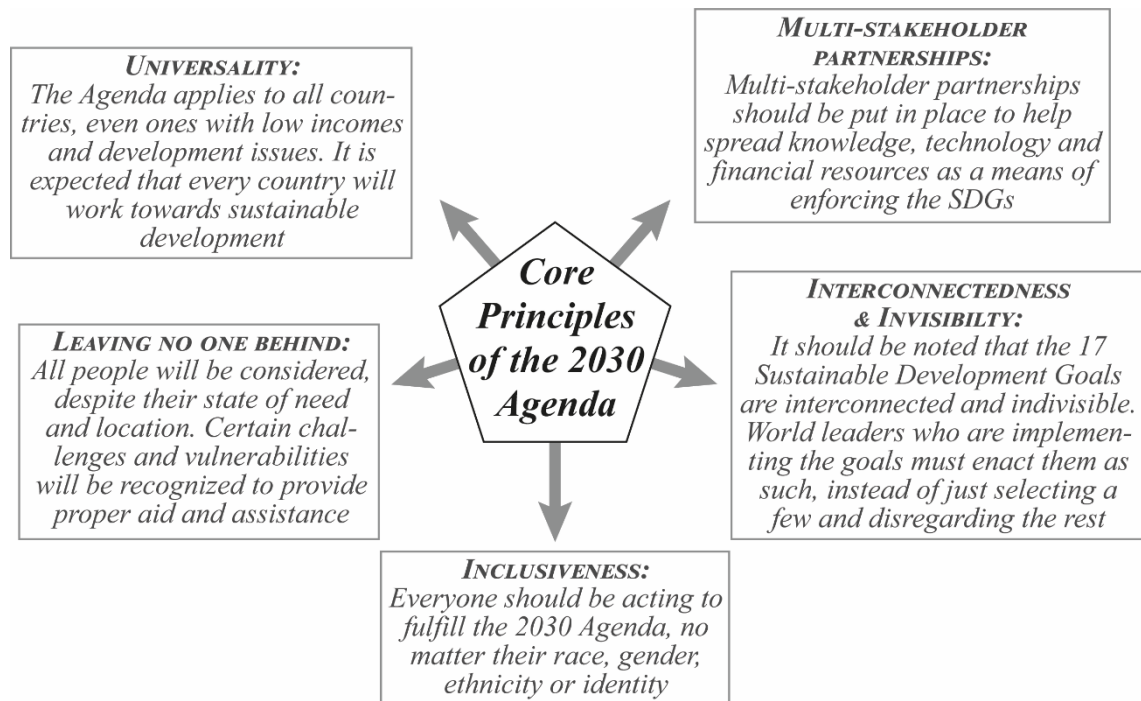


Figure 17 - Core principles of the 2030 Agenda. Source: own elaboration from: <https://www.ie.edu/school-global-public-affairs/about/news/what-is-the-2030-agenda/#>

One of the most important part of the Agenda 2030 for Sustainable Development, is the Preamble since it clearly expresses the attention of the Agenda itself, towards five different dimensions: People, Planet, Prosperity, Peace and Partnerships (United Nations, 2015). However, it is also very important to keep in mind that improvements in one dimension, depend and are closely linked to progress in all other dimensions¹⁷.

¹⁷ “[...] the 2030 Agenda integrates in a balanced manner the three dimensions of sustainable development – economic, social and environmental. The 2030 Agenda is also indivisible, in a sense that it must be implemented as a whole, in an integrated rather than a fragmented manner, recognizing that the different goals and targets are closely interlinked”.

Source: <https://ec.europa.eu/environment/sustainable-development/SDGs/> - visited on 3rd august 2020

Tabel 4 - List of the Sustainable Development Goals included in the 2030 Agenda. Source: own elaboration from: (United Nations, 2015)

Framework of the 2030 Agenda for Sustainable Development		
Goal		Purpose
Goal 1	No poverty	<i>End poverty in all its forms everywhere by 2030</i>
Goal 2	Zero hunger	<i>End hunger, achieve food security and improved nutrition and promote sustainable agriculture</i>
Goal 3	Good health and well-being	<i>Ensure healthy lives and promote well-being for all at all ages</i>
Goal 4	Quality education	<i>Ensure inclusive and quality education for all and promote lifelong learning</i>
Goal 5	Gender equality	<i>Achieve gender equality and empower all women and girls</i>
Goal 6	Clean water and sanitation	<i>Ensure access to safe water sources and sanitation for all</i>
Goal 7	Affordable and clean energy	<i>Ensure access to affordable, reliable, sustainable and modern energy for all</i>
Goal 8	Decent work and economic growth	<i>Promote inclusive and sustainable economic growth, employment and decent work for all</i>
Goal 9	Industry innovation and infrastructure	<i>Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation</i>
Goal 10	Reduced inequalities	<i>Reduce inequalities within and among countries</i>
Goal 11	Sustainable cities and communities	<i>Make cities and human settlements inclusive, safe, resilient, and sustainable</i>
Goal 12	Responsible consumption and production	<i>Ensure sustainable consumption and production patterns</i>
Goal 13	Climate action	<i>Take urgent action to combat climate change and its impact</i>
Goal 14	Life below water	<i>Conserve and sustainably use the oceans, seas and marine resources for sustainable development</i>
Goal 15	Life on land	<i>Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss</i>
Goal 16	Peace, justice and strong institutions	<i>Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels</i>
Goal 17	Partnership for the goals	<i>Strengthen the means of implementation and revitalize the Global Partnership for Sustainable Development</i>

The five dimensions mentioned above are also known as the 5P's of SDGs. Each of these dimensions, however, encompasses all of the Agenda 2030 goals related to the dimension itself. Therefore, through the lens of three fundamental elements such as social inclusion, economic growth and environmental protection, the concept of "sustainable development", thanks to this approach, is given a broader and richer meaning.

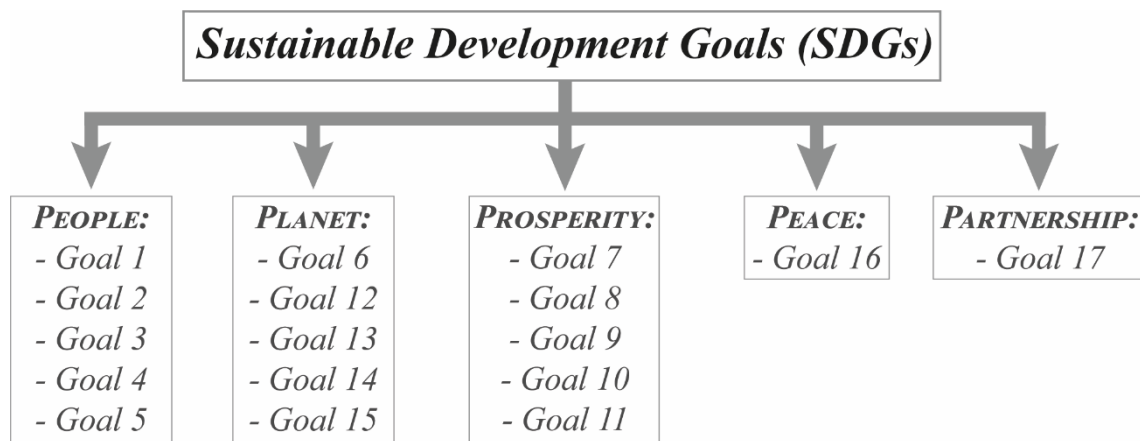


Figure 18 - Subdivision of the SDGs according to the 5P's approach. Source: own elaboration from: <https://whatcanyoudo.earth/selecting-the-sdg-for-your-action/the-5-ps/>

These dimensions, in order to be considered sustainable, need an intervention that has to be capable to consider the social, economic and environmental consequences that could be generated from it. However, policy makers must ensure that each intervention is developed, owned and carried out with the relevant partnerships using appropriate means of implementation. For these reasons, the Agenda 2030, together with its SDGs, represents a holistic approach capable of understanding and addressing all issues. Furthermore, we can consider Agenda 2030 as the tool useful to inspire and enable us to think creatively by identifying innovative approaches and critically rethinking the way we address today's development challenges. In this respect, is also important to emphasize that each individual have to take concrete steps towards life choices that are as sustainable as possible.

Goal 2 – End Hunger

The second goal of the Agenda 2030 is composed by eight targets and fifteen indicators and aims to "*End hunger, achieve food security and improved nutrition and promote sustainable agriculture*". Respectively, the first five targets are directly related to food security and agricultural sustainability while the last three are market-related measures aimed at increasing agricultural investments and reducing market restriction, distortions and volatility (Reidsma, et al., 2018).

Tabel 5 - Targets and respective aims of the Goal 2 of the 2030 Agenda. Source: own elaboration from: (United Nations, 2015)

GOAL 2 – End Hunger	
Target	Purpose
2.1	End Hunger and ensure access by all people
2.2	End all forms of malnutrition
2.3	Double the agricultural productivity and the incomes of small-scale food producer
2.4	Ensure Sustainable food production systems and implement resilient agriculture practices
2.5	Maintain genetic diversity of seeds, cultivated plants, farmed and domesticated animals
2.6 (also known as 2a)	Increase investment

2.7 (also known as 2b)	<i>Correct and prevent trade restrictions and distortions in world agricultural markets</i>
2.8 (also known as 2c)	<i>Adopt measures to ensure the proper functioning of food commodity markets and their derivatives and facilitate access to market information</i>

Inside this Goal, sustainable agriculture, together with the approval of an agricultural approach based on both food and the rural world, is the central pillar of the goal itself. However, in order to alleviate hunger and promote food security and nutrition there may be other "means" that are even more important in many countries (Burchi & Holzapfel, 2015). According to Burchi and Holzapfel's article, the issue of food insecurity and malnutrition in urban areas is almost completely neglected despite more than half of the world's population living in urbanized areas. Moreover, the eradication of hunger requires that the objectives and indicators of SDGs-2 are aligned with the four pillars of food security (availability, access, utilization, stability) (FAO, 2006).

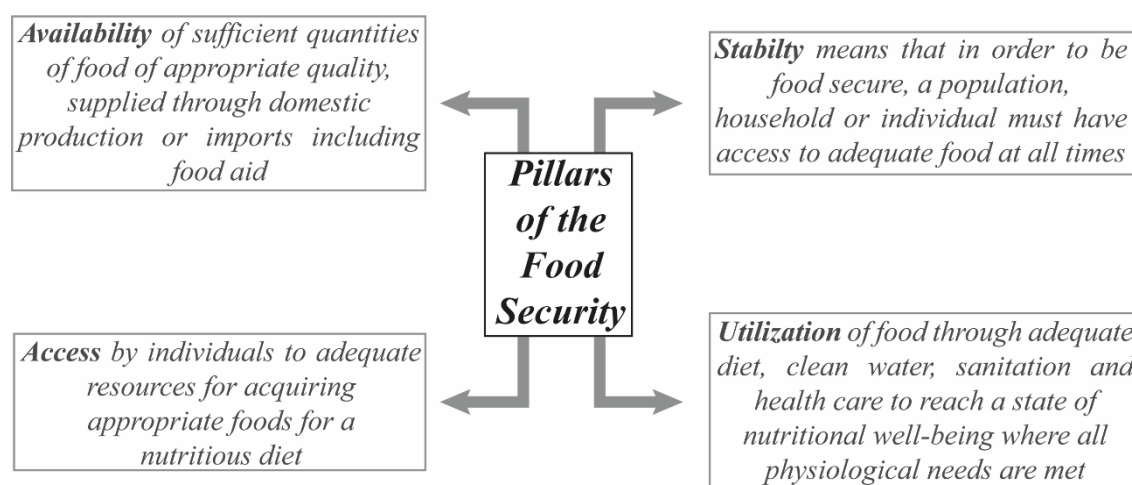


Figure 19 - Pillars of the Food Security. Source: own elaboration from: (FAO, 2006)

Analyzing in detail the proposed targets, it is opportune to highlight how the first five are the fundamental ones in order to determine which are the territorial links between the territory and the population living there. In particular, it can be seen, on the one hand, how the first two targets (target 2.1 and target 2.2) are required to eliminate or at least reduce the problems of hunger and malnutrition among the population, with the consequent desire to ensure access to food for all individuals, especially those who are poor and in vulnerable situations. On the other hand, target 2.3 and 2.4 focus on doubling agricultural productivity and incomes of small food producers (target 2.3) and on creating sustainable production systems capable of maintaining and improving ecosystems and soil quality, preventing drought, flooding and other disasters (Burchi & Holzapfel, 2015). Moreover, target 2.3 at the same time seeks to ensure safe and equal access to land, productive resources and markets to opportunities to create added value and non-agricultural employment.

In order to track the target 2.1, it is possible to use two different indicators. The first one was introduced by the FAO and it is known as the “*Prevalence of Undernourishment Indicator*”¹⁸. When this indicator is used it is very important to take into account its limitations (Burchi & Holzapfel, 2015). The second indicator, instead, was proposed by the IAEG-SDGs in 2015 and measures the prevalence of the population in which moderate or severe food insecurity is present and refers to the Food Insecurity Experience Scale¹⁹. This indicator is a more appropriate measure of food insecurity because it focuses on the dimension of access to food. A further indicator that might be useful to consider, is the one related to the mean or median “*household dietary diversity score*” which is also a measure of economic access to food (Burchi & Holzapfel, 2015). Target 2.2, instead, refers respectively to end all forms of malnutrition²⁰ by 2030 and, for doing so, it uses the indicator of child stunting that is the most appropriate one because has been widely recognized and defined as a measure of chronic malnutrition. However, the use of this indicator is not the only solution to tackle malnutrition as the availability of drinking water and access to sanitation are also useful and effective methods of combating this worldwide problem (Burchi & Holzapfel, 2015).

While the problems of malnutrition and overweight people are becoming increasingly important at the global level, it is also true that issues related to access to healthy and sustainable food sources is not an issue to be underestimated. In this regard, target 2.3 is focused on access to food by farmers and other vulnerable groups in rural areas. By deeply analyse the goal of this target, two questions arise: “*Why double the productivity?*” and “*Why double the income?*”. While this target can be considered reasonable in areas of sub-Saharan Africa with a very low level of productivity, it may not seem reasonable for all those countries with a medium-high income. Target 2.3 refers to the fact that, while it highlights productivity, it does not mention the other major issues facing vulnerable agricultural producers, such as the need to diversify the production process, employment and income, which can reduce risks related to market volatility, climate change and natural disasters. Furthermore, for this target, the IAEG-SDGs only proposed a single indicator that measures the value of agricultural production per unit of work for classes of agriculture, pastoralism and finally forestry enterprise size. However, it is important to underline that this indicator is much better for the income of small farmers than the one previously introduced by UN Stats, such as the “*value of agricultural production per hectare*” indicator. (Burchi & Holzapfel, 2015). For the last target taken into consideration (target 2.4), the IAEG-SDGs suggests to measure the percentage of agricultural area using what can be considered as sustainable agricultural practices. The indicator for this target measures absolute GHG emissions by hectares or units, thus focusing only on one aspect of sustainability not directly related to sustainable food production. However, as an indicator to measure the area subject to sustainable

¹⁸ The Prevalence of Undernourishment (PoU) indicator is an estimate of the proportion of the population whose habitual food consumption is insufficient to provide the dietary energy levels that are required to maintain a normal active and healthy life. Source: <http://www.fao.org/sustainable-development-goals/indicators/211/en/> - visited on 3rd august 2020.

¹⁹ The Food Insecurity Experience Scale (FIES) is a statistical scale designed to measure unobservable traits such as aptitude/intelligence, personality, and a broad range of social psychology and health-related conditions. Source: <http://www.fao.org/in-action/voices-of-the-hungry/fies/en/> - visited on 3rd august 2020

²⁰ According to the World Health Organization, the term “*malnutrition*” refers to deficiencies, excesses, or imbalances in a person's intake of energy and/or nutrients.

Source: <https://www.who.int/news-room/fact-sheets/detail/malnutrition> - visited on 3rd august 2020

agricultural practices is not yet available, the FAO is trying to develop an indicator that can be used to measure the area under sustainable land management.

As shown in the Table below, the indicators that have been proposed by the IAEG-SDG offer a good list from which to proceed, but in spite of this, minor changes would be appropriate with regard to target 2.1. The indicators for the remaining targets, however, have proved to be incomplete as they overlook several important elements of the targets themselves. With reference to target 2.3, it can be determined that it would be better if the prevalence of overweight people were also measured, as this is a problem that is affecting not only developing countries but also the more developed ones, and above all it is affecting not just children but also adult people. The indicator proposed for this third target does not address in any way the problem of food access by households which are dependent on non-agricultural activities. That is the reason why it would be appropriate to include within the target an indicator that is able to consider also rural income poverty. The indicator for target 2.5, on the other hand, overlooks on the one hand the issue of fair access to genetic resources while, on the other hand, it overlooks the fair and equitable sharing of the benefits from their utilisation which is also an important precondition for achieving Goal 2 and targets 2.3 and 2.4 in particular (Burchi & Holzapfel, 2015)

Tabel 6 - Indicators proposed by the IAEG-SDGs for the Goal 2 of the 2030 Agenda. Source: own elaboration from: <https://undocs.org/A/RES/71/313>

Target	Indicators
2.1	<i>Prevalence of Undernourishment</i>
	<i>Prevalence of moderate or severe food insecurity in the population, based on the Food Insecurity Experience Scale (FIES)</i>
2.2	<i>Prevalence of Stunting among children under 5 years of age</i>
	<i>Prevalence of malnutrition among children under 5 years of age, by type (wasting & overweight)</i>
2.3	<i>Volume of production per labour unit by classes of farming/pastoral/forestry enterprise size</i>
	<i>Average income of small-scale food producers, by sex and indigenous status</i>
2.4	<i>Proportion of agricultural area under productive and sustainable agriculture</i>
2.5	<i>Number of plant and animal genetic resources for food and agriculture secured in either medium- or longterm conservation facilities</i>
	<i>Proportion of local breeds classified as being at risk, not at risk or at unknown level of risk of extinction</i>
2a	<i>The agriculture orientation index for government expenditures</i>
	<i>Total official flows to the agriculture sector</i>
2b	<i>Agricultural export subsidies</i>
2c	<i>Indicator of food price anomalies</i>

1.2.2. The New Urban Agenda

The concepts of "*urban*" and "*rural*" are defined by each country using criteria that are adapted to the respective national context. These criteria can be of different nature: *i*) administrative criteria; *ii*) economic criteria; *iii*) population criteria; *iv*) urban criteria. The variability of these criteria has significant impacts on the ability to compare urban areas on a global scale. On the other hand, rural areas are often defined as areas with low population density where agriculture, together with all other primary activities, represents a significant portion of land use, employment, income and economic production. However, the definition of rural areas, following these guidelines, is not applicable to all countries and this is the reason why the ability to define which are rural and which are urban, or the importance in doing so, has changed significantly (CFS, 2016).

Urban and rural areas, have often been considered as two separate sectors both at national and local level but also within multiple agencies at international level. The city has always been conceived as a far-away place where consumers had to be reached by so-called "*market access programmes*", however, there have been very few real links between producers and consumers. Rather, the function of rural areas was declassified to a supporting role, such as they had to feed people with cheap food. In contrast with that, policies pushed towards intensive industrial agriculture, thereby further disconnecting people from their food and leaving more and more room for large distributors and intermediaries who consequently began to take control of ever larger portions of the food chain. Those in charge of decision making within cities, were hardly ever interested in the ecological impact that urban development could have on the peri-urban and rural environment. They saw no role for themselves in developing policies that could influence the food consumption and production patterns of their inhabitants (Florin & Renting, 2015).

What has just been described, however, no longer reflects the realities in which the phenomenon of urbanization has been accompanied by increasingly strong links between rural and urban areas, with more intense flows of people, money and goods through the rural-urban interface. According to the Habitat III Issue Paper on Urban-Rural Linkages, urbanization is defined as a process that profoundly reshape urban, peri-urban and rural areas and has the ability to affect, positively or negatively, their economies, inclusiveness and sustainable development (United Nations, 2015). Nowadays, the rural-urban interface appears to be a fundamental element of many contemporary food systems. However, as urban and rural economies become more and more dependent on each other, they need to be better connected, in order to generate positive dynamics of sustainable development. Recently, there is a growing awareness that the link between rural and urban areas is an essential element in the transition to more sustainable and resilient food systems (IFAD, 2015). Notwithstanding, disparities in spatial development are the crux of why strong urban-rural links are essential to distribute the equal opportunities and benefits of the urbanization process. However, it is also appropriate to remember how the role of small and medium sized town is integral as they frequently provide a bridge between rural dwellers and urban centres, strengthening the economic opportunities, providing a market and access to basic services (United Nations, 2015).

While most of the actions and responses needed are local and context-specific, a shared global agenda can highlight the rural and urban disparities on which more attention needs to be paid. This agenda for post-2015 development can foster a better link between rural and urban areas with the aim of promoting investments in "soft" and "hard" infrastructure that steer this flow towards inclusive growth for the benefit of rural and urban areas in a balanced way. On the international agenda, the backbone will be the United Nations Conference on Housing and Sustainable Urban Development, also known as Habitat III²¹, held in Quito (Ecuador) in October 2016. This conference, was convened to "reinvigorate" the global political commitment to the sustainable development of cities, villages and other types of human settlements, both rural and urban. The result of this reinvigoration, together with the commitments and new obligations, will be an action-oriented document called the "New Urban Agenda" (NUA) (UN General Assembly, 2013).

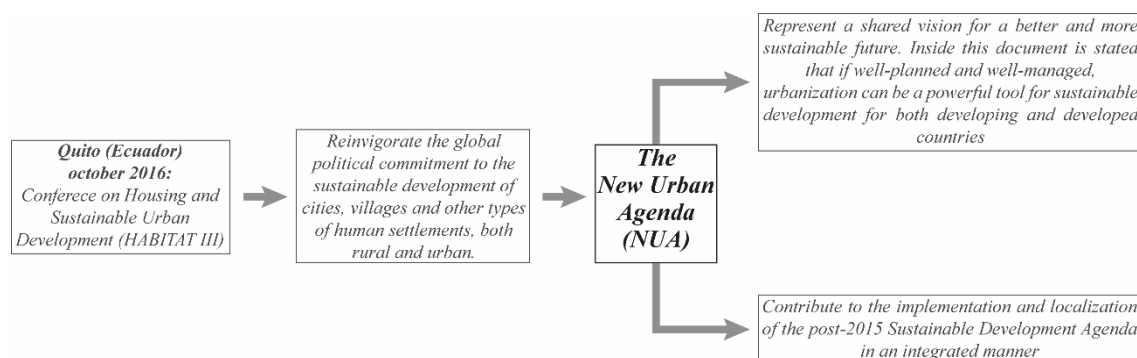


Figure 20 - Habitat III & the New Urban Agenda. Source: own elaboration from: <http://habitat3.org/the-new-urban-agenda/>

A further objective, is to contribute to the implementation and localization of the post-2015 Sustainable Development Agenda in an integrated manner. In fact, the need to achieve urban, peri-urban and rural planning for sustainable development, including food and nutrition, is now clear. This aspect is also contained in Goal 11 of the Agenda 2030 for Sustainable Development which aims to "make cities and human settlements inclusive, safe, resilient and sustainable". On the other hand, section 11a of the article explicitly refers to the need to support positive economic, social and environmental links between urban, peri-urban and rural areas in order to strengthen national and regional development planning (United Nations, 2015). Cities are therefore becoming important players in food supply policies to such an extent that many of them have already developed their urban food policies within an area that tends to be controlled by rural and agricultural policies. According to the researcher at the International Institute for Environment and Development (IIED)²², Cecilia Tacoli, rural-urban links are defined as "flows of goods, people, information, finance, waste and social relations that take place in space and connect rural and urban areas" or are defined as "functional links between sectors (agriculture, industry and services) with many of these links directly or indirectly

²¹ Habitat III is the first UN Global Summit after the adoption of the 2030 Agenda for Sustainable Development and the Sustainable Development Goals. It aims to offer an opportunity to discuss the important challenge of how cities, towns, and villages are planned and managed, in order to fulfil their role as drivers of sustainable development, how they can shape the implementation of the Sustainable Development Goals. Source: <https://www.un.org/sustainabledevelopment/habitat3/> - visited on 6th august 2020

²² The International Institute for Environment and Development (IIED) is an independent research organisation that aims to deliver positive change on a global scale. Its mission is to build a fairer, more sustainable world, using evidence, action and influence, working in partnership with others. Source: <https://www.iied.org/about> - visited on 6th august 2020

related to food and nutrition" (Tacoli, 2015). However, one question arises “*Where does the countryside end and where does the city begin?*”. Even today, answering this question is very complicated as the boundaries between town and country are increasingly blurred. For this reason, urban and rural spaces cannot, but above all, must not be separated as they are inextricably linked to each other and the constant recognition and strengthening of these links is an important starting point for building pathways to sustainable and resilient food systems. In this regard, links between urban and rural areas present both challenges and opportunities to achieve food and nutritional security (Florin & Renting, 2015).

This vision is also shared by Deborah Fulton, Secretary of the Committee on World Food Security, who stated that: *"the rationalization and transformation of agriculture, food systems and rural areas presents challenges and opportunities for inclusive growth, poverty eradication, economic, environmental and social sustainability, food security and nutrition. As a result, there is a growing focus on rural and urban links and approaches that can address these issues in a holistic and integrated way in order to fully address the challenges and maximize the opportunities"*²³. All this translates into the need for new strategies for planning and management of urban, peri-urban and rural areas, in an integrated way and a new form of multi-level governance. It is important to underline how all this has led to the rationalisation of territorial approaches that refer to the city-region. The latter is a concept that replaces the city as a framework when it comes to sustainable urban development. Consequently, cities do not exist in a vacuum and this concept makes it clear that urban and rural links must be present in any urban development goal or plan (Mattheisen, 2015).

1.2.3. National Strategies and Targets

From the moment that Agenda 2030 was drafted and the 17 SDGs were defined, a growing awareness of the need to initiate a process of change in the direction of sustainable development has also begun to grow at the national level (ASVIS, 2020). To confirm this desire for change, in February 2016, thanks to the University of Rome and the Unipolis Foundation, the Italian Alliance for Sustainable Development (ASviS) was established. Its main purpose was to raise awareness of the importance of Agenda 2030 and the respective objectives of sustainable development (SDGs) within Italian society and beyond²⁴. The alliance currently brings together over 270 of the most important institutions and networks of civil society with which it is committed to achieving different objectives. Furthermore, in Italy, the commitment to sustainable development is integrated into the actions of a wide range of public, private and civil society actors, who have already incorporated, or are incorporating, the commitments of Agenda 2030 into their operational programmes. On this point, it is important to underline how ASviS is strongly involved and dedicated in contributing to the design of sustainable policies capable of steering our country on the path of sustainable development. Moreover, through reiterated dialogue with supranational, national and local institutions, the private sector and civil society, the Alliance is committed to fostering the development of a culture of sustainability at all levels. Within this context, the Alliance's Working Groups

²³ Source: <http://www.fao.org/fsnforum/activities/discussions/urbanization-rural-transformation> - visited on 6th august 2020

²⁴ Source: <https://asvis.it/missione/> - visited on 20th November 2020

initiate a phase of consultation to evaluate the impact of the measures developed by the Government in the light of the Sustainable Development Objectives and to elaborate a set of concrete proposals for policies to be submitted to the summits²⁵.

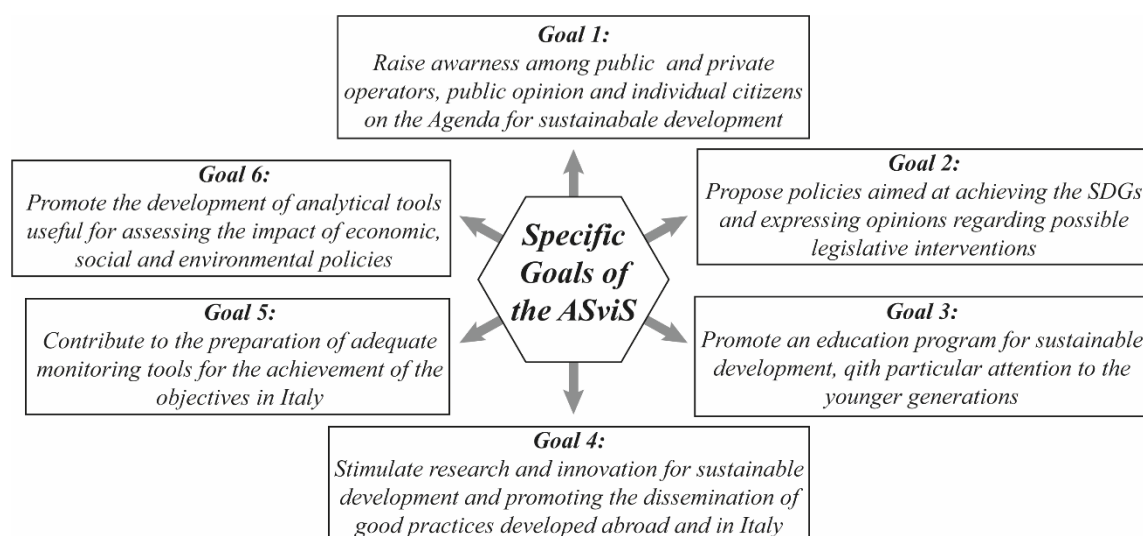


Figure 21 - Specific goals of the ASviS. Source: own elaboration from: <https://asvis.it/missione/>

1.3. The European Framework for food policies

Sustainable development has long been at the heart of the European project and the European Union (EU) Treaties recognize its economic, social and environmental dimensions that should be addressed together. Therefore, according to the European Commission (EC), the concept of "*sustainable development*" aims to meet the needs of current generations without compromising the ability of future ones to meet their own needs²⁶. The Treaty on European Union clearly defines the EU vision for a sustainable development of Europe based on balanced economic growth, price stability, a highly competitive social market economy and a high level of protection and improvement of the quality of the environment²⁷.

In this third section of the first chapter, has been analyzed some of the most important European pacts, programs and strategies whose objectives coincide and refer to the achievement of economic and social sustainability but above, all these documents aim to transform the environment by making it more sustainable. The first document analysed will be what is today defined as "*The New Green Deal*", a series of measures aimed at making energy production and the lifestyle of European citizens more sustainable and less harmful to the environment²⁸. Subsequently, the "*Farm to Fork*" strategy also known as the "*From Producer to Consumers*" will be analysed. This strategy lies at the heart of the Green Deal and addresses the challenges of achieving sustainable food systems in a global way, recognizing the inseparable links between healthy people,

²⁵ Source: <https://asvis.it/missione/> - visited on 20th November 2020

²⁶ Source: https://ec.europa.eu/info/strategy/international-strategies/sustainable-development-goals/eu-approach-sustainable-development_en – visited on 7th august 2020

²⁷ Source : https://ec.europa.eu/environment/sustainable-development/index_en.htm – visited on 7th august 2020

²⁸ Source: <https://www.ilpost.it/2020/02/02/green-deal-europeo/> - visited on 7th august 2020

healthy societies and a healthy planet. Another initiative that deserves consideration is the Common Agricultural Policy (CAP), a partnership, launched in 1962, between agriculture and society, and between Europe and its farmers. The objectives of this policy are manifold, such as the desire to support farmers and improve agricultural productivity, thereby ensuring a stable supply of food at affordable prices, and the desire to keep the rural economy alive by promoting employment in agriculture, the food industries and in the associated sectors²⁹.

1.3.1 The New Green Deal

In the world in which we live, climate change and environmental degradation are a constant threat both to Europe and to the whole world³⁰. It is clear to all that temperatures are rising year after year, seas and forests are becoming increasingly polluted and the climate is constantly changing (UE, 2019). All these things are exposing not only human beings but also many of the animal and non-animal species that inhabit our planet to great risks. Therefore, the European Commission has identified the New Green Deal as the appropriate tool to address these challenges, thus outlining a growth strategy that aims to transform the EU into a fair and prosperous society, with a modern and resource efficient economy but, at the same time, a competitive one, with the objective of completely eliminating greenhouse gas emissions by 2050 (UE, 2019).

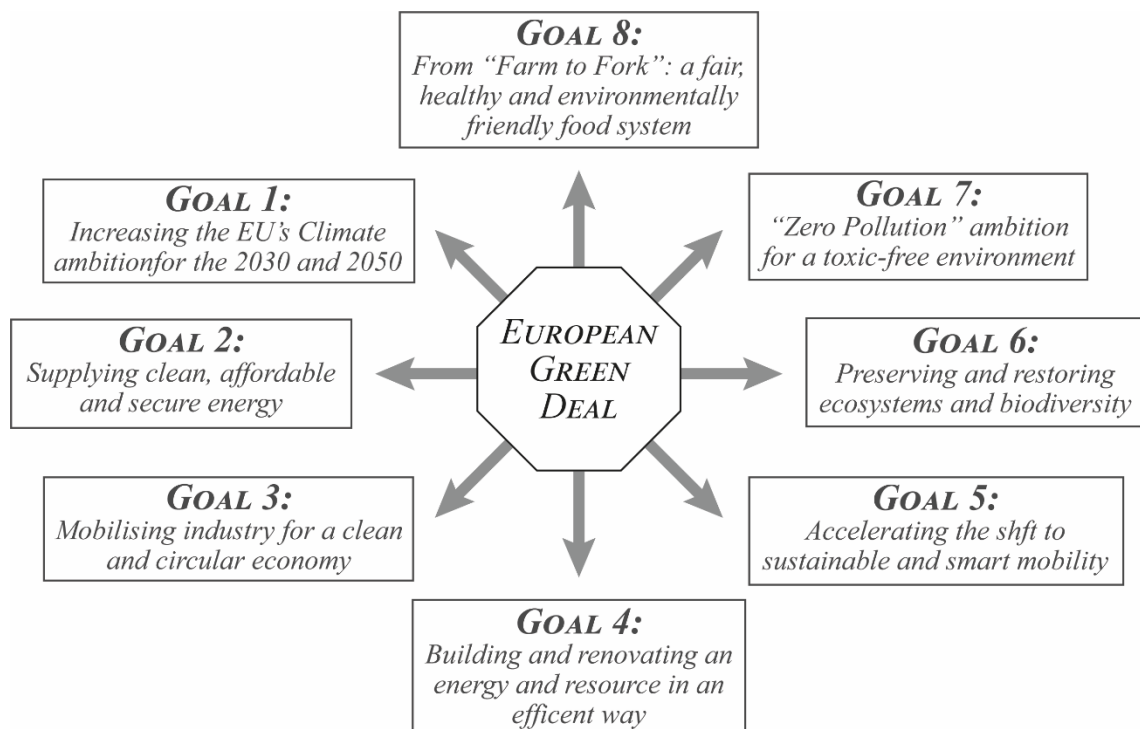


Figure 22 - Main Goals of the European Green Deal. Source: own elaboration from: (UE, 2019)

²⁹ Source: https://ec.europa.eu/info/food-farming-fisheries/key-policies/common-agricultural-policy/cap-glance_en – visited on 7th august 2020

³⁰ Source: https://ec.europa.eu/info/strategy/priorities-2019-2024/european-green-deal_it - visited on 7th august 2020

In addition, the European Union is also committed to protecting, preserving and enhancing the EU's natural capital and protecting the health and well-being of its citizens from the risks of environmental impacts. This transformation process must not only be fair and inclusive, but must also take care to put people in first place and then pay attention to regions, industries and workers as they will face the greatest efforts. As a consequence of these transformations, a substantial change will be generated in which the active participation of people and trust in the transition are essential if policies need to work and be accepted. This will create the need for a new pact that can bring citizens together with national, regional, local, civil and government authorities (UE, 2019).

Within the Communication sent to the European Parliament, the Council and the European Economic and Social Committee have defined the first guidelines, concerning the main policies and measures necessary for the realization of the European Green Deal. These guidelines, have been subsequently modified and implemented, on the one hand, by the needs that may emerge and, on the other, by the related strategic responses (UE, 2019). It is also important to remember that all actions and policies of the European Union should contribute clearly to the objectives of the Green Deal. Therefore, the Green Deal is an essential part of the Commission's strategy to implement Agenda 2030 and the Sustainable Development Objectives as well as the other priorities announced in the political guidelines of President Ursula von der Leyen (Von Der Leyen, 2020). The aim of integrating SDGs into the Green Deal is to put sustainability and the well-being of citizens at the heart of economic policy and to make sustainable development objectives the focus of EU policy and action.

Taking into consideration the image above, it is possible to have an overview of the main targets that the Green Deal aims to reach by 2030. However, only a small number of the represented targets have been analyzed in depth. Respectively, Goal n.1, n.6 and n.8 (which will be analysed separately in the next paragraph) have been chosen because they offer important insights to understand the relationships between food, landscape and territory. However, in order to achieve these objectives, it is essential to increase the value attached to the protection and restoration of natural ecosystems, but also to the sustainable use of the resources at our disposal and the improvement of human health.

- **Goal 1:** *Increasing the EU's climate ambition for 2030 and 2050*

The European Commission in November 2018 presented its long-term strategic vision for a prosperous, modern, competitive and climate neutral economy by 2050 (UE, 2019). This vision forms the basis of the long-term strategy that the European Union presented in early 2020 to the United Nations Framework Convention on Climate Change³¹. In March 2020 the Commission proposed the first European "*climate law*"³² in which the conditions for a fair and effective transition to a more sustainable future were

³¹ United Nations Framework Convention on Climate Change (UNFCCC), agreed in 1992, is the main international treaty on fighting climate change. Its objective is to prevent dangerous man-made interference with the global climate system.

Source: https://ec.europa.eu/clima/policies/international/negotiations_en - visited on 8th august 2020

³² On March 4, 2020 the European Commission have introduced the new Climate Law, in accordance with the European Green Deal Roadmap. This law concretizes, in a legal act, the political commitment towards a more sustainable future. Source: <https://ambiente.regione.emilia-romagna.it/it/cambiamenti-climatici/notizie/notizie-dai-territori/2020-1/nuova-legge-sul-clima-presentata-il-4-marzo-dalla-commissione-europea> - visited on 8th august 2020

established. Moreover, climate law ensures that all EU policies contribute to the objective of achieving climate neutrality by 2050. As climate change will continue to generate major problems in Europe, the European Commission will adopt a new and more ambitious strategy for adaptation to climate change. Therefore, it will be essential to step up efforts on climate resilience in order to achieve resilience, prevention and preparedness.

- **Goal 6: Preserving and restoring ecosystems and biodiversity**

The term "*ecosystem*" refers to all plants, animals and people living together within a given area, with their environment as a set of relationships³³. What emerges from these ecosystems are the essential services that are, in turn, identified in food, fresh water, air and shelter. In addition, ecosystems, on the one hand, mitigate natural disasters and, on the other, contribute strongly to climate regulation. In this regard, it is important to point out that one of the primary tasks that the EU, together with its global partners, cannot avoid is the need to stop biodiversity loss. According to the Global Assessment Report drawn up in 2019, on Biodiversity and Ecosystem Services³⁴, the erosion of biodiversity worldwide is mainly due to changes in land and sea use patterns, direct exploitation of natural resources and climate change which, in turn, have been identified as the third cause of biodiversity loss. In order to ensure a key role for the European Union in this fight against biodiversity loss, the European Commission has adopted a biodiversity strategy which will be followed by specific actions in 2021. This strategy has the task of identifying specific measures to achieve the objectives set, which could in turn include quantifiable targets such as extending the coverage of land and sea areas rich in protected biodiversity from the Natura 2000³⁵ network.

Tabel 7 - Comparison of the expected result & future actions of the main goals of the European Green Deal. Source: own elaboration from: (UE, 2019)

Comparison between the main goals of the European Green Deal		
Goal	Purpose of the Goal	Expected result
Goal 1	Increasing the EU's climate ambition for 2030 & 2050	Achieving climate neutrality by 2050
		European Commission will adopt a new and more ambitious strategy for adaptation to climate change
Goal 2	Supplying clean, affordable and secure energy	Develop an energy sector based on renewable sources reducing the gas decarbonization
		Ensure that each Member State respects and rigorously applies the proposed legislation
Goal 3	Mobilising industry for a clean and circular economy	Address the double challenge of a green but digital transformation
		Contribute to the modernization process of EU's industry through the Action Plan conceived by the European Union

³³ Source: <https://dictionary.cambridge.org/it/dizionario/inglese/ecosystem> - visited on 9th august 2020

³⁴ The Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) is the intergovernmental body which assesses the state of biodiversity and of the ecosystem services it provides to society, in response to requests from decision makers. Source: <https://ipbes.net/> - visited on 9th august 2020

³⁵ Natura 2000 is the main instrument of the European Union's biodiversity conservation policy. It is an ecological network spread throughout the territory of the Union with aim of ensuring the long-term maintenance of natural habitats and species of flora and fauna threatened or rare at Community level. Source: <https://www.minambiente.it/pagina/rete-natura-2000> - visited on 9th august 2020

Goal 4	Building and renovating in an energy and resource efficient way	European Union and Member States will start a process of renovating private and public buildings
		Reduction of energy bills in order to fight energy poverty
Goal 5	Accelerating the shift to sustainable and smart mobility	Reduce greenhouse gas emissions by about 90% by 2050
		Promote different transport alternatives that are cheaper, accessible, healthier and cleaner
		Create a transport system capable of supporting new sustainable mobility services
Goal 6	Preserving and restoring ecosystems and biodiversity	Stop biodiversity loss
Goal 7	A zero pollution ambition for a toxic free environment	Adoption of an Action Plan for zero pollution of air, water and soil in 2021
		Presentation of a chemicals strategy for sustainability
Goal 8	From "Farm to Fork": designing a fair, healthy and environmentally-friendly food system	Analyse the individual stages of the food chain with the aim of formulating a more sustainable food policy by using the "Farm to Fork" strategy
		Ensure that national strategic plans for agriculture fully reflect the ambition of the Green Deal and the 'Farm to Fork' strategy

1.3.2. "Farm to Fork" Strategy

The "Farm to Fork" strategy, more commonly called "From Producer to Consumer", lies at the heart of the European Green Deal and aims to address on a global scale the challenges of achieving sustainable food systems, recognising the inseparable links between healthy people, healthy societies and a healthy planet. Moreover, if on the one side this strategy will analyse the individual stages of the food chain with the aim of formulating a more sustainable food policy (UE, 2019), on the other side, it appears to be a central element of the European Commission's Agenda for achieving the SDGs proposed by the United Nations. Therefore, this transition toward a more sustainable food system can bring environmental, social and health benefits on the one hand but, at the same time, it can offer economic benefits and ensure a more sustainable recovery from the crisis (Business & Sustainable Development Commission, 2017). This strategy also constitutes a new comprehensive approach to the value that the Europeans attach to food sustainability. Consequently, it represents an opportunity to improve lifestyles, health and the environment. According to this, the creation of a favourable food environment that facilitates the choice of healthy and sustainable diets will bring benefits to the health and quality of life of consumers, thereby reducing the health costs to society.

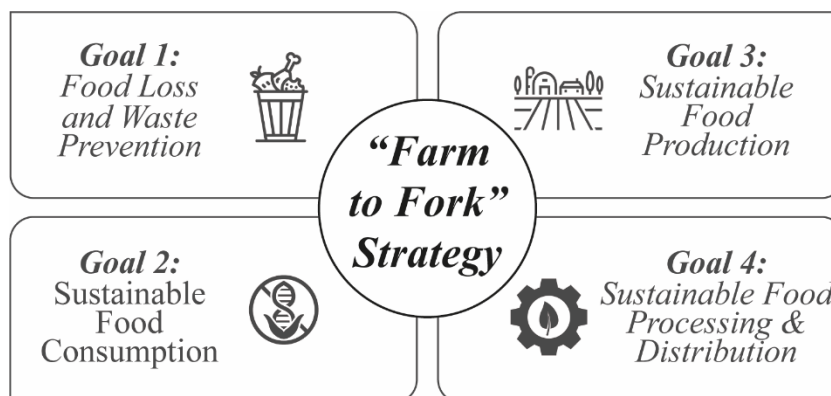


Figure 23 - Four main goals of the "Farm to Fork" Strategy. Source: own elaboration from: https://ec.europa.eu/food/farm2fork_en

Although the EU's transition process towards more sustainable food systems, has started in many areas and although individuals are paying increasing attention to environmental, health, social and ethical issues (European Food Safety Authority, 2019), food systems remain a major cause of climate change and environmental degradation. As a result there is a strong need to reduce the use of pesticides and antimicrobials, reduce excessive use of fertilizers, enhance organic farming, improve animal welfare and reverse biodiversity loss. Moreover, the above-mentioned transition to sustainable food systems represents also a huge economic opportunity as citizens' expectations evolve and consequently trigger a significant change within the food market. However, it is clear that this process of renovation cannot take place without first making a change in people's diets. Unfortunately, European diets are not in line with national dietary recommendations and therefore, in the current “*food environment*”³⁶, even the healthiest option is not always the most easily available. If European diets were in line with nutritional recommendations, the environmental footprint of food systems would be significantly reduced.

Ensuring the sustainability of Food Production

In order to achieve the goal of sustainability, all actors involved in the food chain must contribute to the cause. In doing so, farmers, fishermen and aquaculture producers must be able to transform their production methods by making them faster and able to make the best possible use of nature, technology and space-based solutions in order to achieve better results in both climate and environmental terms. In order to ensure the sustainability of the production phase of the food chain, a number of actions and initiatives have been defined. Respectively, these are identified: *i)* in the “*Carbon Farming*” initiative³⁷; *ii)* in the Circular Bio-economy method. However, this will only happen if these investments are made in a sustainable way and without compromising the security of food supply or biodiversity as regards the scope of clean energy initiatives and programmes (Commissione Europea, 2020). As the use of chemical pesticides in agriculture is becoming increasingly common, it is important to point out that they not only contribute to soil, water and air pollution but, above all, contribute to the loss of biodiversity.

³⁶ With the concept of “*food environment*” we refer to the physical, economic, political and socio-cultural context in which consumers engage with the food system to make their decisions about acquiring, preparing and consuming food. Source: (CFS, 2017) – visited on 11th august 2020

³⁷ Source: https://ec.europa.eu/food/farm2fork/sustainable-food-production_en - visited on 11th august 2020

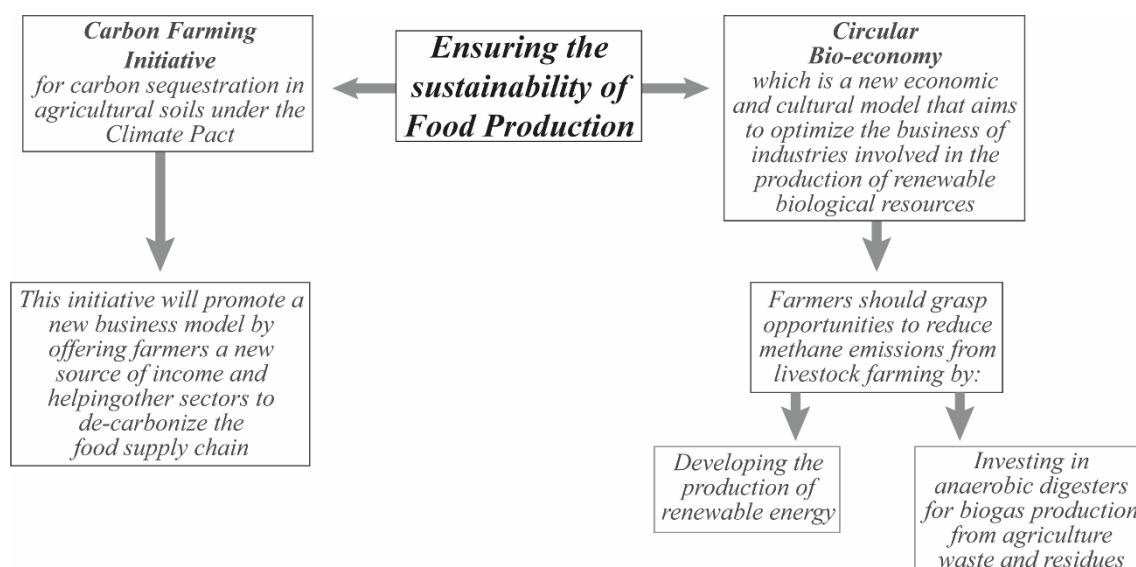


Figure 24 - Initiatives and actions aimed at ensuring the sustainability of Food production. Source: own elaboration from: (Commissione Europea, 2020)

In order to stem this problem and thus achieve more sustainable food systems, the Commission has already established an indicator to quantify the progress made in reducing the risks associated with the use of pesticides. Another very important aspect that deserves to be analysed more in detail is the one referring to the European Union's greenhouse gas emissions (GHG). Referring to the Annual European Union Greenhouse gas Inventory Report 2019, the agricultural sector is responsible for 10.3 % of EU greenhouse gas emissions, of which almost 70 % comes from the livestock sector (European Environment Agency, 2019). However, in order to help reducing the environmental and climate impact of livestock production, the Commission will facilitate the placing on the market of sustainable and innovative feed additives and will consider the possibility of introduce European standards to reduce dependence on critical feed materials. However, it is clear that this transition process should be supported by a new Common Agricultural Policy (CAP)³⁸ focusing primarily on the Green Deal. Proposed in 2018 by the European Commission, this policy aims to help farmers improving their environmental and climate performance through the adoption of a more result-oriented model, improved mandatory environmental standards, new voluntary measures and a greater focus on investment in green and digital technologies and practices. In addition, the CAP aims to ensure a decent income that allows farmers to provide for their families and to resist crises of all kinds (Commissione Europea, 2020). Through the analysis of the links between the CAP reform and the Green Deal, the Commission concludes that the reform has the potential to contribute to the Green Deal.

³⁸ On 1 June 2018, the European Commission presented legislative proposals on the common agricultural policy (CAP) beyond 2020. These proposals aim to make the CAP more responsive to current and future challenges such as climate change or generational renewal, while continuing to support European farmers for a sustainable and competitive agricultural sector. Source: https://ec.europa.eu/info/food-farming-fisheries/key-policies/common-agricultural-policy/future-cap_en - visited on 12th august 2020

Ensuring the sustainability of Food Production

The Food and Agriculture Organization (FAO) states that the concept of “*Food System*” (FS) encompass the entire range of actors and their interlinked value-adding activities involved in the production, aggregation, processing, distribution, consumption and disposal of food products that originate from agriculture, forestry or fisheries, and parts of the broader economic, societal and natural environments in which they are embedded. The Food and Agriculture Organization, declares that the food system is composed of sub-system and interacts with other key systems. Therefore, a structural change in the food system might originate from a change in another system. On the other hand, instead, the concept of “*Sustainable Food System*” (SFS) refers to a food system that delivers food security and nutrition of all in such a way that the economic, social and environmental bases to generate food security and nutrition for future generations are not compromised (FAO, 2018). Therefore, according to this statement, the SFS generates profitable economic, social and environmental sustainability.

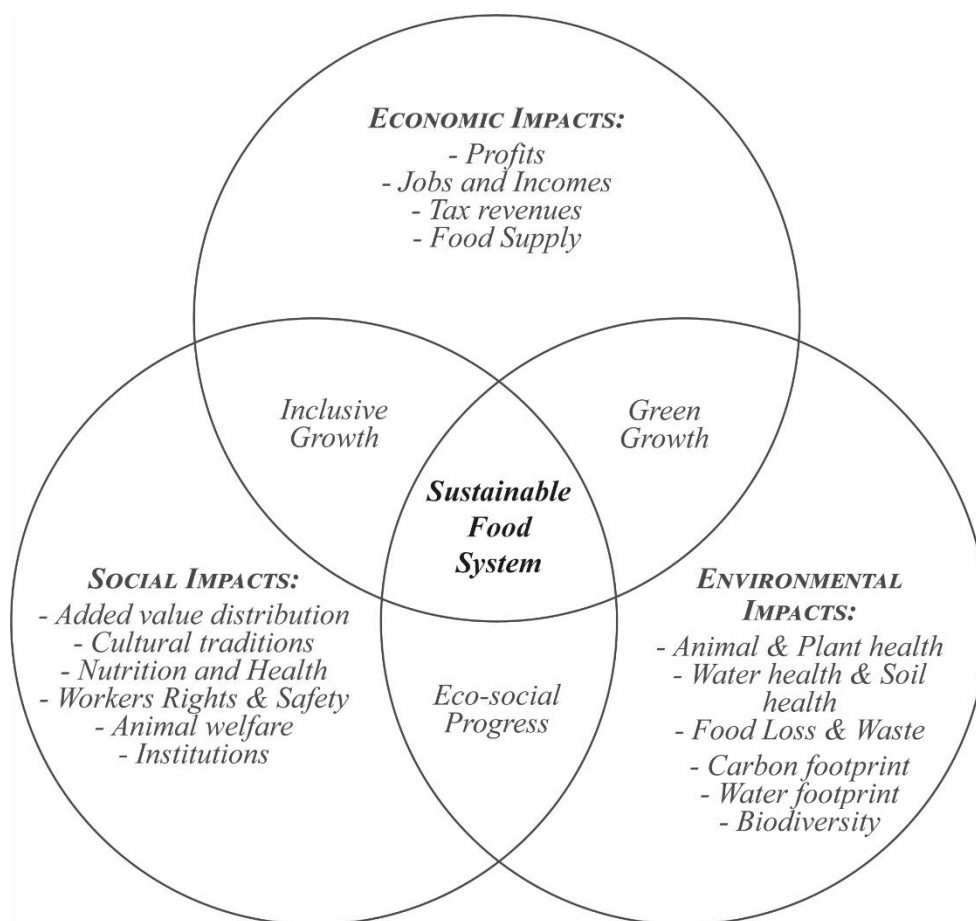


Figure 25 - Sustainable Food System. Source: own elaboration from: (FAO, 2018)

A sustainable food system, must guarantee people a sufficient and diversified supply of safe, nutritious, affordable and sustainable food at all times, even in times of crisis. However, events affecting the sustainability of food systems do not necessarily arise from the food supply chain but can also be triggered by political, economic, environmental or health crises. In addition, due to its complexity and the large number of stakeholders, the food value chain can be adversely affected by crises in many different ways. Therefore, a clear and current example of these negative influences can be associated with the pandemic that the whole world is facing right now. While food supply in general has been sufficient in this respect, Covid-19 pandemic has generated many

challenges such as logistical disruption of supply chains, loss of some markets and changing consumption patterns. All these challenges have inevitably had an impact on the functioning of food systems (Commissione Europea, 2020) as the improvement of the sustainability of the food supply chain by food producers will consequently lead to an increase in the resilience of the food supply chain itself.

In conclusion, the "*Farm to Fork*" strategy aims to provide a new framework integrated by the measures defined within the biodiversity strategy. One more time the Commission will play a very important role as it will intensify its efforts to coordinate a common European response to crises affecting food systems in order to ensure both security of food supply and food security. The Commission will also assess the effective resilience of the food system and develop a contingency plan to be implemented in times of crisis in order to guarantee food supply and food security in equal measure (Commissione Europea, 2020).

Ensuring the sustainability of Food Processing and Distribution

The process of transition to a more sustainable food system must not only focus on food production and supply, it should also take into account the final stages of the food chain such as food processing and market distribution. Food processors, food service operators and retailers therefore play a strong central role within the food supply chain as they define the market and influence consumers' choices through the type and nutritional composition of their food products. As Europe is the world's largest importer and exporter of food, the food and beverage industry affects the environmental and social footprint of world trade (Commissione Europea, 2020). For these reasons, strengthening the sustainability of our food systems can help further build the reputation of businesses and products, create shareholder value, improve working conditions, attract employees and investors, and confer competitive advantage, productivity gains and reduced costs for companies (Hanson & Mitchell, 2017). The food industry and retail sector should show the way forward, by increasing the availability and affordability of healthy and sustainable food options with the aim of reducing the overall environmental footprint of the food system. In order to achieve this objective, the Commission will develop an EU code of conduct for responsible business and marketing practices to be developed by all stakeholders and accompanied by a monitoring framework.

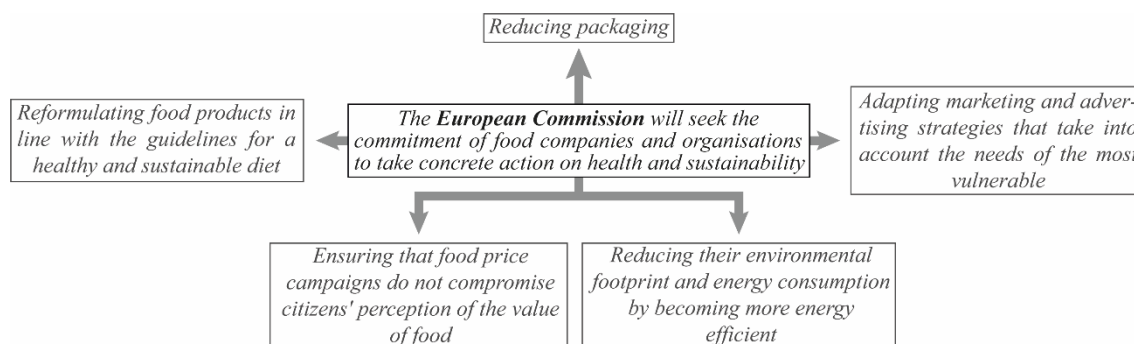


Figure 26 - Concrete actions of the European Commission (EC) in order to ensure sustainable Food Processing & Distribution. Source: own elaboration from: (Commissione Europea, 2020)

Ensuring the sustainability of Food Processing and Distribution

The last few decades have been characterised by numerous important changes in both food consumption and people's habits. Therefore, referring to changes in food consumption patterns, it can be observed that these do not only refer to an increasing intake of hyper-calorie foods but also to a shift in the composition of diets that tend to be increasingly rich in fats and sugars. For these reasons, current food consumption patterns are unsustainable both from an environmental and health point of view. On the one hand, the average intake of red meat, sugars, salt and fats in the European Union is continuing to increase exponentially, while on the other hand, the intake and consumption of cereals, legumes, fruit and vegetables are clearly insufficient (Commissione Europea, 2020). However, reversing the course by 2030 with the aim of slowing down the growth of overweight and obese people is very difficult but at the same time absolutely necessary. Moving to a diet in which fruit and vegetables are the core foodstuffs, will lead to a significant reduction not only in the risks related to human health but also in the impacts affecting the environment and the food system itself (FAO & WHO, 2019).

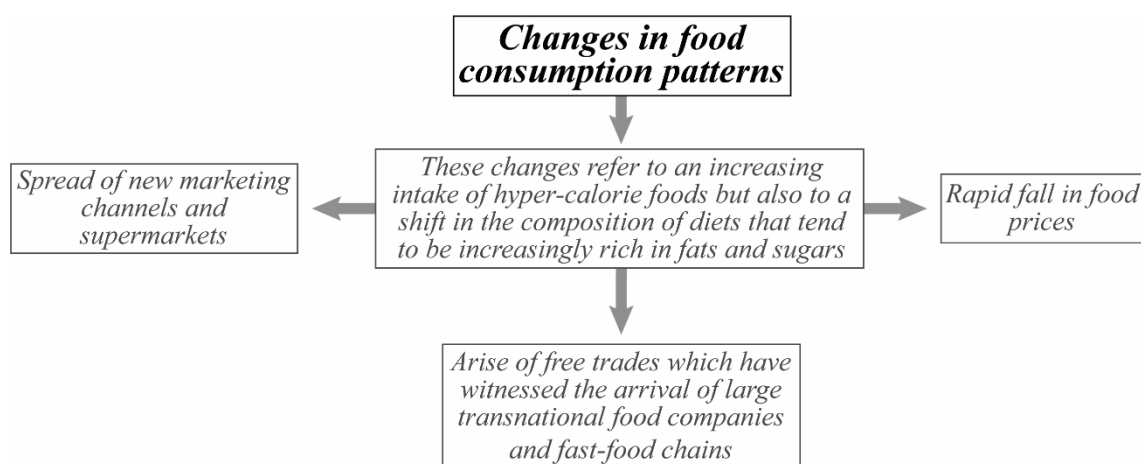


Figure 27 - Consequences of changes in food consumption pattern. Source: own elaboration from: (Schmidhuber, 2004)

Providing consumers with more information that are clear and helpful to them in choosing healthier and more sustainable diets, will benefit their health and quality of life and inevitably lead to lower health care costs. Therefore, in order to provide consumers with the tools they need to make informed food choices, the European Commission requires nutritional labelling on the front of the package, on which the origin and provenance of the products must be indicated. The objective of the European Commission, in the field of food consumption, is therefore to require product traceability but also to improve the availability of sustainable food. All these aspects will help cities, regions and public authorities to do their part by finding sustainable food for schools, hospitals and public institutions. On the other hand, this scenario will give a boost to sustainable agriculture such as, for example, organic farming. Finally, to achieve the transition to a more sustainable food system, fiscal incentives will be provided to encourage consumers to choose healthier diets (Commissione Europea, 2020).

Food Loss and Waste prevention

The concept of "*Food Loss*" refers to the decrease in quantity or quality of food and it also possible to consider it as the agricultural or fisheries products intended for human consumption that are ultimately not eaten by people or that have incurred a reduction in quality reflected in their nutritional value, economic value or food safety (FAO, 2015). A remarkable portion of food loss is "*Food Waste*" which refers instead to the discarding or alternative use of food that was fit for human consumption by choice or after the food has been left to spoil or expire, as a result of negligence. While many accurate estimates of the magnitude of food loss and waste are lacking, especially in developing countries, there is no doubt that food loss and waste remains one of the most important problems affecting our societies (FAO, 2015).

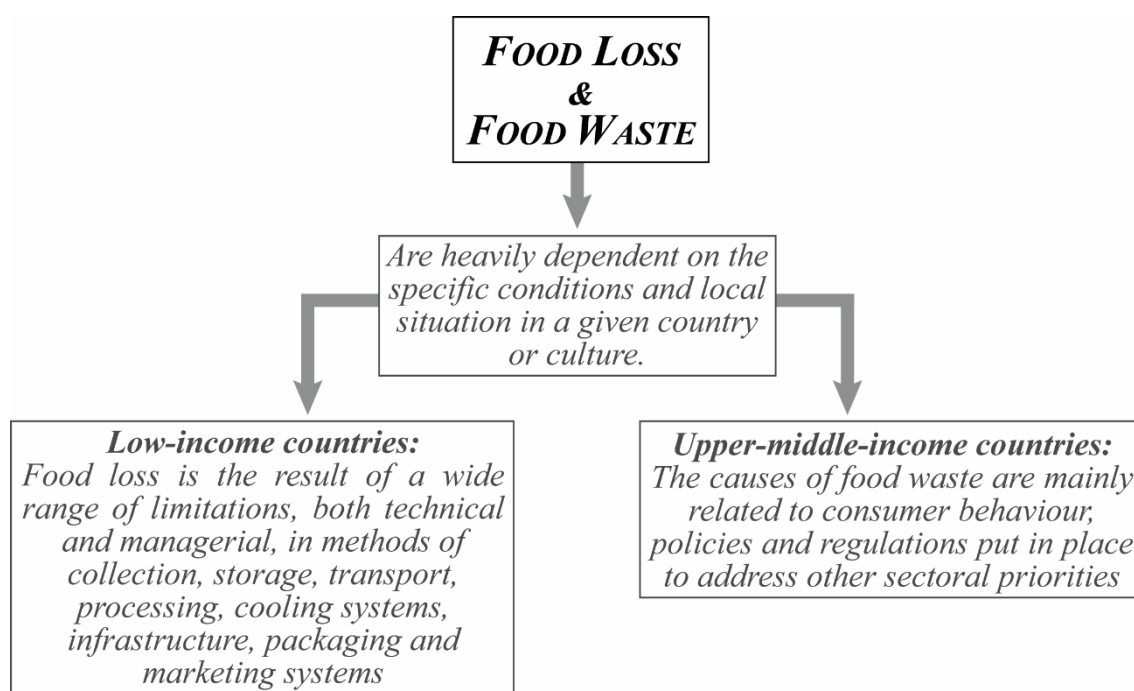


Figure 28 - Food Loss and Food Waste. Source: own elaboration from: (FAO, 2015)

The fight against food losses and waste is therefore essential to achieve the level of food sustainability so greatly desired by the European Union (Commissione Europea, 2020). According to what has been stated by FAO, food loss and waste have a negative environmental impact due to the use of water, land, energy and other natural resources that are implicated in the production of food that nobody consumes (FAO, 2015). However, in general terms, less food loss is associated with a more efficient food supply, and possibly a more effective resource recycling process. While reducing food waste inevitably leads to savings for consumers and operators, the recovery and redistribution of food surpluses, which would otherwise be wasted, has an important social dimension (European Commission, 2020). Therefore, within this context, the European Commission is committed to halving per capita food waste at retail and consumer level by 2030³⁹.

³⁹ This objective is also been declared within target 3 of the Goal 12 of the Sustainable Development Goals (SDGs). Source: (Burchi & Holzapfel, 2015) – visited on 13th august 2020

1.3.3. The Common Agricultural Policy (CAP)

The Common Agricultural Policy (CAP) introduced in 1962 with the EU Treaty of Rome⁴⁰ is the link between an increasingly urbanised world on the one hand and an increasingly strategic approach to agriculture on the other (Commissione Europea, 2012). For these reasons, the European Union (EU) considers the CAP like a partnership between agriculture and Europe itself, based on the desire to re-establish the contract of mutual trust between European citizens and their agriculture. According to Dacian Cioloş, European Commissioner for Agriculture and Rural Development, agriculture is today at the heart of the challenges that are facing our societies, including food. The territorial challenge is reflected in the need to preserve the continuity in European territories of the agricultural sector, which is essential both for the vitality of rural economies and for our heritage. The main consequence is that the relationship between Europe and farmers is very close because, one needs the other and vice versa. (Commissione Europea, 2012). The European Union has 500 million consumers who require a constant supply of food that is healthy, nutritious and affordable (Commissione Europea, 2012). Despite this, global competition, the economic and financial crisis, climate change and rising input costs are both present and future obstacles. In this regard, referring to Article 39 of the Treaty on the Functioning of the European Union, it is possible to have a general picture of what are the specific objectives that the CAP.

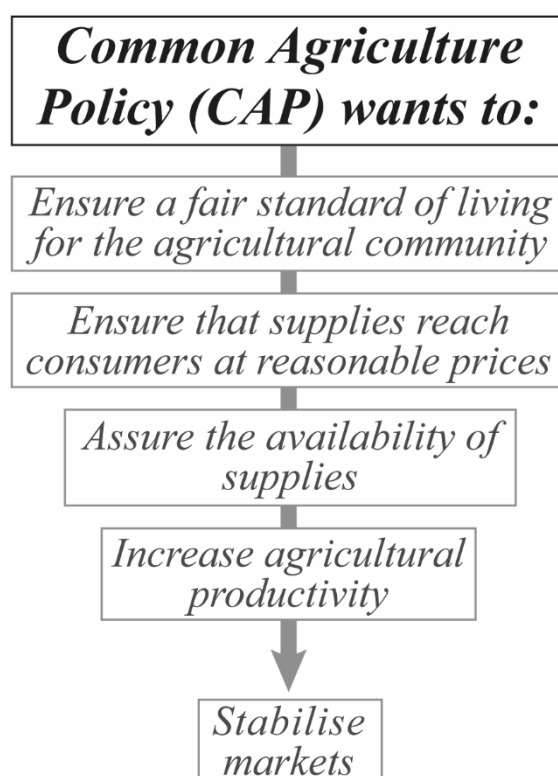


Figure 29 - Main aims of the Common Agriculture Policy.

Source: own elaboration from: <https://eur-lex.europa.eu/legal-content/EN/TXT/>

⁴⁰ The Treaty of Rome, signed on 25 March 1957, was initially adopted by only six countries (Belgium, France, West Germany, Italy, Luxembourg and the Netherlands) and it allowed the establishment of the European Economic Community (EEC) with the aim of creating a common market and a customs union among its members. Source: <https://www.britannica.com/event/Treaty-of-Rome> - visited on 14th august 2020

These objectives are divided into two categories. The first one concerns economic objectives while the second one focus all the social objectives. Since they were drafted, these objectives have remained largely unchanged simply because their formulation has proved over the years to be very flexible and capable of understanding the many reforms that have taken place since the 1980s. In order to be able to ensure what European consumers want the Common Agricultural Policy creates favourable conditions for farmers, allowing them to best carry out their multiple functions within society, in particular that of food production (Commissione Europea, 2012). However, by looking at estimates of population growth in future years, it is easy to determine that food production will need to double for feeding 9 billion people in 2050 (Commissione Europea, 2012). In addition, by looking at the world's picture just described, it is clear that agriculture and food production are both fundamental elements of the European economy and of our societies.

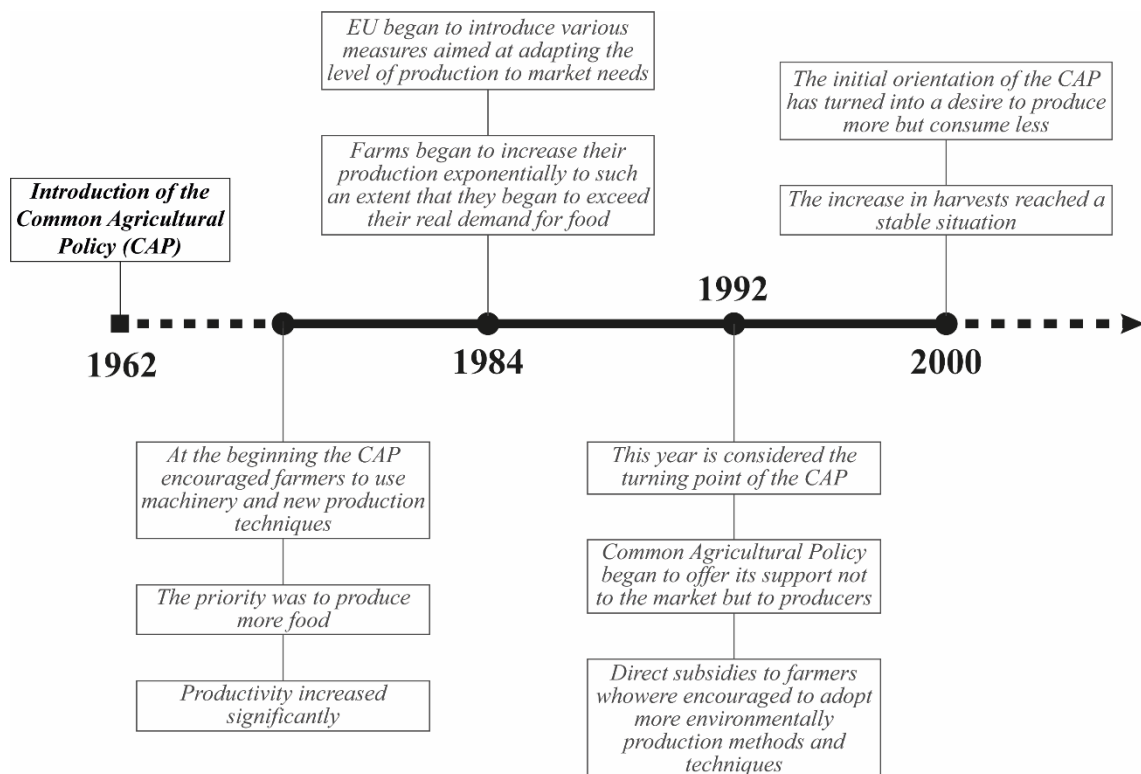


Figure 30 - Main steps of the CAP. Source: own elaboration from: (Commissione Europea, 2012)

According to this situation, the EU has decided to readjust the objectives of the Common Agricultural Policy in order to help farmers to: *i)* adopt cultivation practices that reduce greenhouse gas (GHG) emissions; *ii)* use environmentally friendly farming techniques; *iii)* comply with public health, environmental and animal welfare standards; *iv)* produce and market the food specialties of their regions; *v)* make more productive use of forests and wooded areas; *vi)* develop new ways of using agricultural products in the cosmetics, medicine and handicraft sectors (Commissione Europea, 2012). In 2011, there was a CAP reform proposal through which there was the intention to strengthen the competitiveness of the agricultural sector, promote innovation, combat climate change and support growth and employment in rural areas (Commissione Europea, 2012). Subsequently, in 2018 the European Commission presented a series of legislative proposals on the CAP for the period 2021-2027 that would enable the CAP to better

address future challenges, while continuing to support European farmers to promote a sustainable and competitive agricultural sector⁴¹.



Figure 31 - Nine objectives of the CAP. Source: own elaboration from: https://ec.europa.eu/info/food-farming-fisheries/key-policies/common-agricultural-policy/future-cap_en

According to the draft proposed by the European Commission, the objectives that have been taken into consideration for this document, are the following:

- **Goal 1: Supporting sufficient agricultural income and resilience across the EU to improve food security**

One of the specific objectives of the CAP is to ensure the maintenance of a viable agricultural sector that continues to provide food supplies to the population of the European Union. This aspect depends on the possibility of maintaining an adequate income for farmers in all territories, reducing as much as possible the salary gap with other sectors through direct support. The latter is justified on economic (food security), social (employment) and environmental (reinforced cross-compliance) grounds. Strong competition, market instability and price volatility require appropriate support arrangements for farmers: one of the priority economic challenges of the future CAP is the ability to secure and stabilise farmers' incomes and increase their resilience through more targeted and balanced support between sectors and farms. (MIPAAF, 2019)

⁴¹ Source: https://ec.europa.eu/info/food-farming-fisheries/key-policies/common-agricultural-policy/future-cap_it - visited on 14th august 2020

- **Goal 3:** *Improving the position of farmers in the food chain*

The specific objective of improving the position of farmers in the value chain contributes to the overall objective of promoting a smart, resilient and diversified agricultural sector, together with the other two specific objectives related to agricultural income. This specific objective, in the design of the CAP post-2020, corresponds to a single impact indicator aimed to improve the position of farmers in the agri-food chain: added value of primary producers in the agri-food chain (MIPAAF, 2019).

- **Goal 5:** *Fostering sustainable development and efficient management of natural resources such as water, soil and air*

According to the legislative proposals of the European Commission (June 2018), the CAP post-2020 will be required to play a leading role in increasing the sustainability of the agricultural sector through a series of instruments that, together with the social development of rural areas and the competitiveness of farms, should contribute more efficiently to the achievement of environmental and climate objectives. The proposal repeatedly stresses the indispensable role of farmers as guardians and managers of ecosystems, natural resources, habitats and landscapes and the need to increase the effectiveness of interventions in these areas. (MIPAAF, 2019)

- **Goal 6:** *Contributing to the protection of biodiversity, strengthening ecosystem services and preserving habitats and landscape*

This sixth objective of the new CAP aims to contribute to the protection of biodiversity, strengthen ecosystem services and preserve habitats and landscapes by encouraging the adoption of farming practices with less environmental impact and sustainable management of agro-zoo-technical and forestry systems. However, by seeking to achieve this goal, the CAP seeks to combat the abandonment of marginal areas, protecting and enhancing agrobiodiversity and strengthening the link between specific landscapes and farming practices, recognising the landscape as a place of cultural identity and protecting its landscape, architectural, agricultural and cultural values. (MIPAAF, 2019)

- **Goal 8:** *Promoting employment, growth, social inclusion and local development in rural areas, including the bio-economy and sustainable forestry*

The aim of supporting the socio-economic fabric of rural areas in future CAP programming is to reduce disparities and depopulation and increase territorial cohesion by exploiting the potential and aspirations of citizens and communities in rural areas. The future CAP will support actions that stimulate growth and will promote the environmental and socio-economic sustainability of rural areas, through the creation of new jobs, new small businesses (including the bio-economy and sustainable forestry sectors), social inclusion and the livability of places (services and infrastructure). (MIPAAF, 2019)

1.4. Strengths and weaknesses of the food policy framework at global scale

Eradicating hunger was from the beginning a long-term goal of the international community to such an extent that, since the post-WWII period, world leaders, alongside their desire for peace and prosperity, believed in the collective responsibility of the international community to fight hunger in order to achieve food security for all individuals. In 1945, the Food and Agriculture Organization (FAO) was established as the first specialized agency of the United Nations in the fight against hunger. From this moment on, the history and structure of global governance related to food security has been characterized by numerous institutional and political innovations. However, over the years, the FAO's modus operandi has changed considerably to try to face, on the one hand, an ever-changing reality and, on the other, ever-changing beliefs. The current governance framework designed to achieve global food security is significantly different from the original post-war arrangements because, at that time, food security policies focused exclusively on increasing global food productivity and not on making the whole process more environmentally, socially and economically sustainable (Margulis, 2012).

In my opinion, despite repeated declarations of intent, I believe that the international community has partially failed to ensure global food security. This conclusion has been reached after having seen and reasoned, on the one hand, on the percentage of undernourished people in the world and, on the other hand, on the data on food waste. If on the one hand, according to FAO estimates of 2018, the percentage of undernourished people in the world is 10.8%⁴², on the other hand the annual percentage of food produced that is lost or wasted between the harvesting phase and the retail sale, is around 14%⁴³. I strongly believe that these two numbers represent an unacceptable scenario in which the current food system, mainly industrial, is not able to offer an adequate solution to the problem. Over the years we have always tried to maximize profits and production volumes rather than focusing on promoting more resilient and sustainable food systems from a social, economic and environmental point of view.

Therefore, starting from the seventies and eighties of the twentieth century, we began to face and understand what are the limits that characterize the growth of the industrial model of production. Inside the latter, the factors that are considered as tangible signs of a food system that must necessarily change, are identified in market distortions, negative effects on the environment, dependence on the use of chemical fertilizers and pesticides that have led to a slow but gradual degradation of the soil, the increase in food-related diseases, the presence of monocultures that have impoverished our food and finally the loss of biodiversity (Donkers, 2015). Moreover, in 2014, Oliver De Schutter said that as we enter a new century, the questions we ask ourselves are different from those of the past. He argued that a paradigm focused on well-being, resilience and sustainability must be designed to replace, first of all, the productivist paradigm and then to better support the realization of the right to adequate food (UN General Assembly, 2014).

⁴² Source: <https://ourworldindata.org/hunger-and-undernourishment#how-many-people-are-undernourished> – visited on 30th November 2020

⁴³ Source: <http://www.fao.org/international-day-awareness-food-loss-waste/en/> - visited on 30th November 2020

In designing this new paradigm that must be both resilient and sustainable, there is another factor to take into account that has been extensively analyzed and described in the first chapter of this paper. This factor concerns the increasing percentage of people migrating from rural to urban areas and settling within cities. While it is now clear that building more resilient urban food systems is essential, it is less clear how best to achieve this. For many, the biggest push to try to solve the massive task of reforming the global food system comes from local solutions. However, after having completed this first part of the elaboration, and after having studied in depth the different aspects of the issue in question, it seems appropriate to me to emphasize that, according to my personal consideration, the global dimension of which we are aware appears detached or at worst deprived of the local one. Today cities are emerging as new urban spaces of deliberation whose main objective is the transition to more sustainable and fairer food systems. These spaces constitute a meeting place between civil society, private actors and the local state. Therefore, as is already happening in many parts of the world, an alliance is emerging between the local state and civil society in the design and development of urban food policies. Nevertheless, it is imperative to better understand what is the most appropriate scale and organizational form to feed a rapidly growing and urbanizing planet, respecting, protecting and satisfying the right to adequate food.

In this first chapter, I have tried to highlight how food needs and deserves a new and greater consideration within urban contexts, as the Urban Agenda has been considered for too long not as equal to other more traditional public policies such as health and education. The paradoxes of our current food systems are now plain for all to see and are a sign of the need for change. In conclusion I also strongly believe that as long as economic interests take priority over people, and if we do not start adopting an individual-centered approach by looking at local realities, we will never solve the global food problem. In this regard, I was very impressed by what food planner Carolyn Steel said during a monologue in TED Talks: "Cities are what we eat"⁴⁴. This phrase, in my opinion, perfectly represents the moment when our relationship, both with food and cities, must change radically.

⁴⁴ Source: https://www.ted.com/talks/carolyn_steel_how_food_shapes_our_cities?language=en#t-5778 - 30th November 2020

CHAPTER 2

Food Planning: a review of the literature and European Projects

2.1. Literature review on Food Planning

In the previous chapter, the relationship between the urbanization process, the phenomenon of globalization and the concept of food security has been analysed in detail. The negative influences that these three realities generate on modern societies and the environment that surrounds us have also been described and deeply analysed. However, if on the one hand these three phenomena lead to a change in the social, economic and cultural dynamics of each country, on the other hand they generate a series of dangerous situations both for the environment and for human health itself. In this regard, it is as much superfluous as important to remember how these effects, in the long term, lead to the definition of a production system and food chains that are highly unsustainable. For these reasons, over the years the need for a "*New Food Equation*" has emerged whose primary objective is to guarantee access and food security to all individuals in both developed and developing countries. Within this new equation, cities play a very important role both for ecological and political reasons. In doing so, urban centres have taken on a new leadership role for the ecological survival of the human species, with the intent to demonstrate that large concentrations of people can find more sustainable ways to co-exist and co-evolve with nature. Within this challenge, the agri-food system is certainly at the forefront for its unique role in sustaining human life and the intensive use of climate-sensitive resources, especially land, water and the environment (Morgan & Sonnino, 2010).

In this second chapter, a complete picture of the process that today is identified as "*food planning*" is thus offered. However, in order to achieve this goal it was necessary to carry out a review of the literature through which it was possible to identify the different facets of the above-mentioned topic. On the one hand, the information (documents, books, articles, and reports) useful to the cause, has been found through the implication of different browser such as Google Scholar, Science Direct and Scopus. Through these portals has been possible to carried out a keywords research. However, more information about the theme have been acquired through two additional digital platforms (Researchgate, Academia) whose purpose is to make available and downloadable the texts written by multiple authors from all around the world. Therefore, in the first section of the chapter, the origins and the main evolutionary stages of the phenomenon will be investigated. Successively, the attention will be concentrate, on the one side, on the link between urban and rural areas while on the other side urban agriculture, urban policies and strategies related to food issues will be addressed. In conclusion, in the second part of the chapter, a number of European projects have been identified through which it has been possible to analyze and understand how the issue of food planning is managed and organized within different international realities.

2.1.1. Origins, Methods, Concept and Evolution of the term

Several urban issues that have not always been the focus of the work of planners and designers are now transforming the understanding of typical urban systems and expanding areas of concern, as well as becoming catalysts for innovative responses. The disconnection between food systems and city dwellers is one of these problems (Nasr & Komisar, 2016). Initially, the focus of planners was centred on all the essential elements of human life except for food. For these reasons, the food system has long been viewed as unrelated to the planning field (Morgan, 2013). In this regard, several reasons can be identified to explain why planners have paid less attention to food issues than to long-standing planning topics (economic development, transportation, environment, housing). Among these various reasons is possible to identify⁴⁵: *i)* the view that the food system only indirectly touches the built environment which is one of the main points of interest in the planning process; *ii)* the feeling that the food system is not "broken" and therefore should not be fixed; *iii)* the perception that the food system does not meet any of the important conditions under which planners operate. Despite this, over the past fifteen years, there has been a gradual emergence of an awareness of the urban nature of food-related issues that were formerly limited exclusively to the rural sector. Within this scenario, cities have thus been progressively identified as the main drivers of the global food system, even if they are particularly exposed to the negative externalities of the aforementioned new food equation. However, cities and city-regions have been recognized as scales of action of the so-called Urban Food Planning (Calori, et al., 2017). In parallel with the recognition of the centrality of urban centres in food systems planning, there has also been a growing awareness among planners that the food system itself plays a truly significant role⁴⁶.

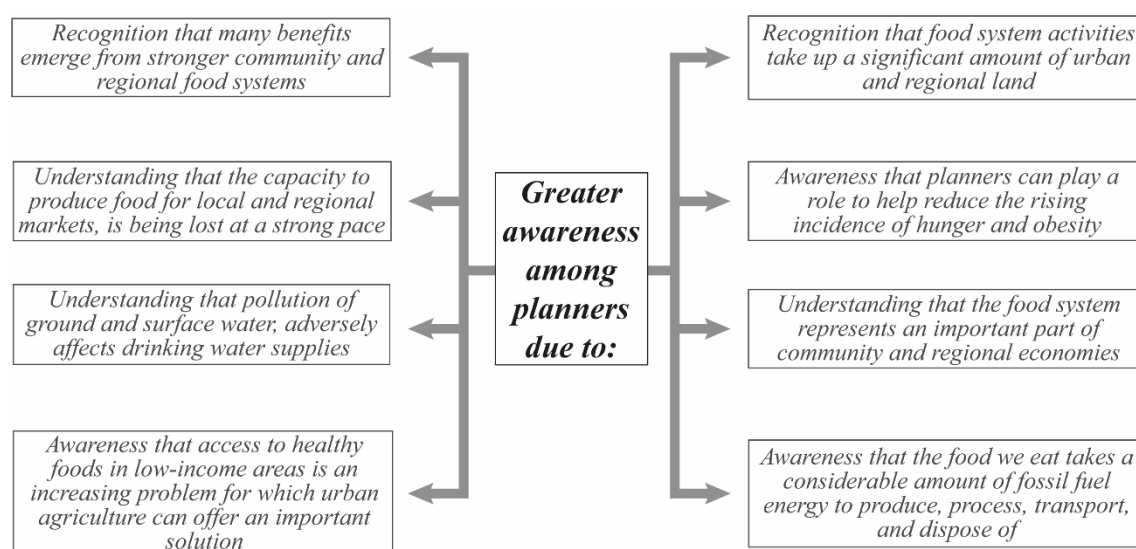


Figure 32 - Factors that explain the heightened awareness among planners that the food system. Source: own elaboration from: <https://www.planning.org/policy/guides/adopted/food>

⁴⁵ Source: <https://www.planning.org/policy/guides/adopted/food.htm> - visited on 9th December 2020

⁴⁶ *Ibid.*,

Moreover, many urban areas are progressively acquiring useful skills and tasks to develop policies focused on planning and managing sustainable urban food systems with the goal of ensuring healthy, high-quality, and accessible food for all city dwellers (Moragues-Faus & Morgan, 2015). Following this logic, cities are now being recognized as new actors in food policies, especially through the planning of local food systems on an urban/metropolitan scale and through the development and implementation of Urban Food Strategies (UFS) and Urban Food Policies (UFP) (Moragues-Faus, et al., 2013). In this regard, some cities and regions, predominantly in the Global North, have made progress in understanding the advantages and benefits that are generated by greater integration of food issues within the planning process (Cabannes & Marocchio, 2018). As a result of this, it is important to note how local governments are moving towards by incorporating food into their planning agendas and by giving priority to comprehensive plans, zoning and other forms of regulation instead of financial investment or physical infrastructure (Raja, et al., 2018). Notwithstanding, while local governments, flanked and assisted by Association of European School of Planning (AESOP), are beginning to introduce food and food planning issues into their planning agendas, the international and global framework still lacks any kind of legal instrument (covenants and declarations) capable of managing the relationship between food and urban planning (Cabannes & Marocchio, 2018). However, going backwards, it is important to remember that during the first Summit on Cities and Human Settlements held in Vancouver in 1976, the concepts of "food" and "urban planning" began to approach each other within international declarations with the primary purpose of creating a better local environment in which to integrate food into urban planning practices (Cabannes & Marocchio, 2018).

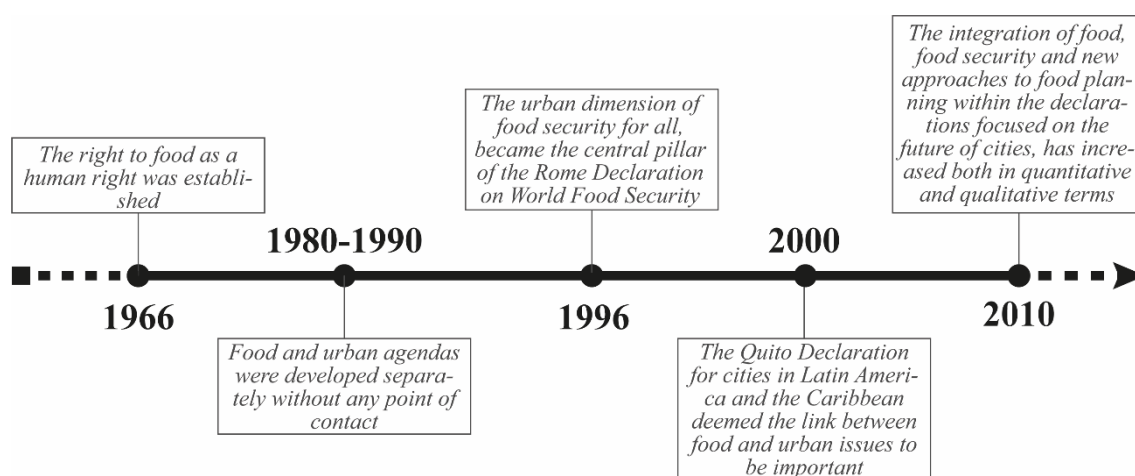


Figure 33 - Main steps related to the interaction between "food" and "urban planning". Source: own elaboration from: (Cabannes & Marocchio, 2018)

Through community and regional planning that examines food quality and availability in a systemic manner, planners can play a central role in shaping the community food environment and thereby facilitate healthy eating (Raja, et al., 2018). In order to be able to strengthen the linkages between traditional planning and the emerging field of community and regional food planning, a policy guide on Community and Regional Food Planning (CRFP) was drafted in May 2007 whose goal was to provide insight and suggest useful ways for planners to engage in food planning. Two overarching

goals can be identified from here that tie into the planner's role⁴⁷: *i)* help build stronger, more sustainable, and more self-sufficient community and regional food systems; *ii)* suggest ways in which the industrial food system can interact with communities and regions to enhance benefits such as economic vitality, public health, ecological sustainability, social equity, and cultural diversity. One of the most widely used definitions to describe what a food system is, comes from the United Nations Group of Experts on Food Security and Nutrition, which defines sustainable food systems as those systems that provide food security and nutrition for all people in such a way that the economic, social, and environmental foundations for generating food security and nutrition for future generations are not compromised (Carlsson, et al., 2017).

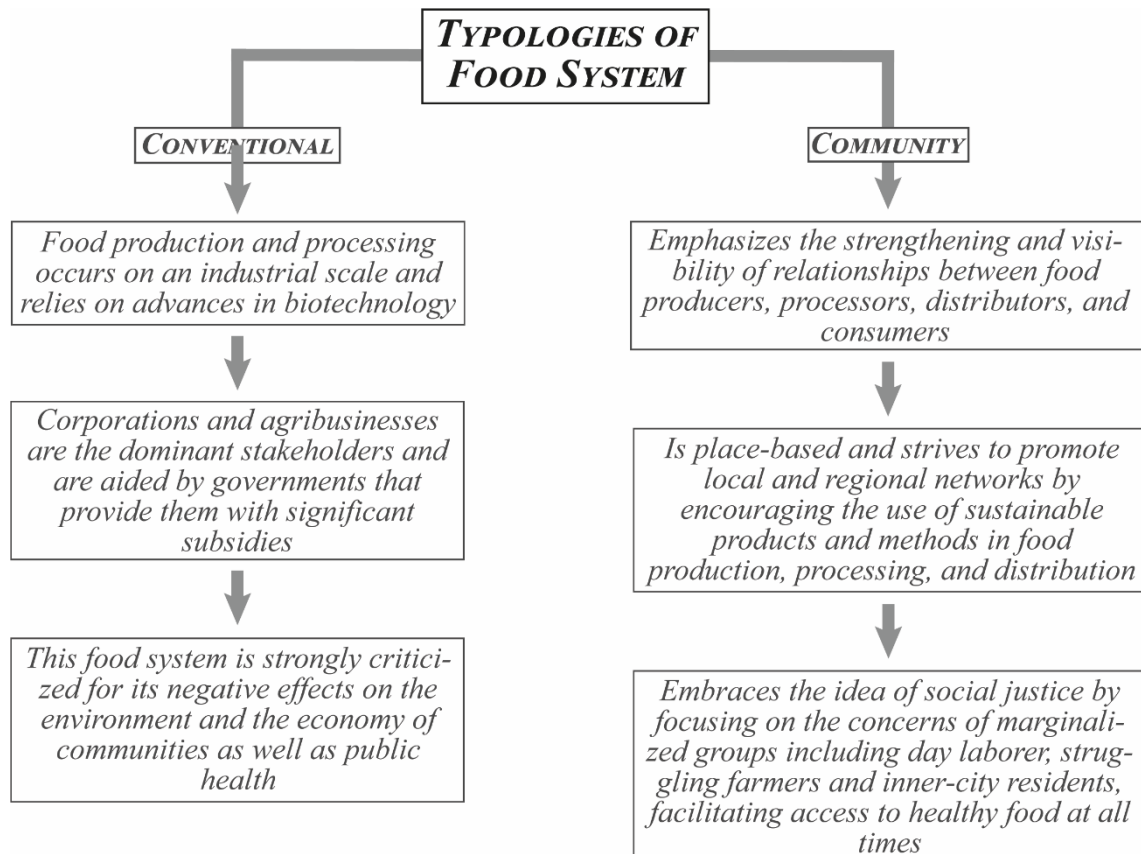


Figure 34 - Conventional and Community Food System. Source: own elaboration from: (Raja, et al., 2008)

In conclusion, the primary objective of the guide based on CRFP is to improve, together with local governments and planners, the food system of a community by identifying a series of efforts and initiatives aimed at promoting healthy eating. In this regard, within the guide four main initiatives are identified: *i)* community gardens & urban farms; *ii)* farmers' markets; *iii)* community supported agriculture; *iv)* farm-to-school programs (Raja, et al., 2008).

⁴⁷ Source: <https://www.planning.org/policy/guides/adopted/food.htm> - visited on 9th December 2020

Tabel 8 - Initiative & Programs proposed by the Guide on CRFP. Source: own elaboration from: (Raja, et al., 2008)

Policy Guide on Community Regional Food Planning	
Initiatives & Programs	Main characteristics
Community Gardens & Urban Farms	<i>Community gardens are shared open spaces where individuals garden together to grow fresh, healthful, and affordable fruits and vegetables</i>
	<i>In addition to being productive spaces where people can grow affordable and healthful foods, community gardens provide numerous other benefits, many of which are much valued by planners</i>
	<i>Community gardens last only when there is community motivation, engagement, and ownership over the gardens</i>
	<i>Community gardens function as civic spaces that promote social, cultural, and intergenerational exchange in a neighborhood</i>
Farmers' Markets (FMs)	<i>Described as "recurrent markets at fixed locations where farm products are sold by farmers themselves", farmers' markets connect consumers to producers</i>
	<i>Consumers can purchase fresh, locally grown, healthful produce from farmers</i>
	<i>The presence of farmers' markets in cities, especially in low-income urban areas, presents an opportunity for both residents and farmers</i>
	<i>Farmers' markets have to respond to customers' economic realities in addition to their preferences and level of knowledge regarding healthful foods</i>
Community Supported Agriculture (CSA)	<i>Community supported agriculture programs connect farmers directly with consumers</i>
	<i>Participation in a CSA ensures that city residents receive a steady supply of high-quality, fresh, typically organically grown produce during the growing season</i>
	<i>Thus, food sold through a CSA has the potential to be lower or comparable in cost to produce purchased at a conventional grocery store</i>
Farm-to-School Programs	<i>A farm-to-school program brings fresh, healthful foods from local farms to school cafeterias</i>
	<i>These programs are designed to provide nutritional benefits to youth while expanding new market opportunities for farmers</i>
	<i>Farm-to-School programs offer significant potential for improving food environments in schools, as well as for supporting the local farm economy</i>

2.1.2. The relation between Urban and Rural

Within an increasingly urbanized world, it is inevitable that substantial, although less rapid and linear than expected, transformations in population distribution will occur (Tacoli, et al., 2015). However, since the world's population will turn out to be progressively more urbanized, it seems possible to consider this development as one of the main reasons why investments in the last decades have been mainly focused on "urban development" leaving the rural population behind (Taguchi & Santini, 2018). In this regard, Calori and Magarini argue that as urbanization has been advancing around the world, city analysis and management techniques have been able to specialize in their approach by giving greater priority to the urban side of development at the expense of the rural side, which is consequently somehow suppressed (Calori & Magarini, 2015). However, if on the one hand the expansion of cities, which must be attributed to a rapid phenomenon of urbanization, is aggravating the problem of land degradation likewise

contributing to the reduction of arable land, on the other hand it is inevitable to emphasize how the cities themselves are becoming a crucial part of the solutions useful to solve the problem. This aspect is especially applicable to small and medium-sized cities, given their proximity to rural areas with which ties of inter-dependence are often established (Sonnino, 2019). These ties, besides altering the traditional role of urban and rural areas (Hatcher, 2017), are characterized by important synergies between rural and urban interests. Therefore, it is worth noting how rural and urban areas need each other's support. Respectively, the rural population is highly dependent on urban centres in terms of access to schools, hospitals, and all those public services present within cities (Tacoli, 2003) while, on the other hand, most cities benefit greatly from their proximity to rural areas in terms of food supply, waste disposal, and freshwater resources (Ndabeni, 2015).

Policymakers in addressing relevant issues such as poverty reduction and economic development, classify economic activities as "*rural*" or "*urban*". This distinction not only disregards the important linkages between rural and urban activities, but also leads to inefficiencies and causes inequalities that inhibit growth and development (Akkoyunlu, 2013). For these reasons, through the term "*Rural-Urban Linkages*" it is possible to define the relationships that are maintained between individuals and groups located in urban environment and those in rural areas. Furthermore, rural-urban linkages can also refer to the spatial and sectoral flows that occur between urban and rural areas (Ndabeni, 2015). A better understanding of the opportunities and constraints of rural-urban linkages, will contribute to sustainable development through the adoption of appropriate economic and social policies and multiple interventions (Akkoyunlu, 2013). The Organization for Economic Cooperation and Development (OCED) also argues that these linkages between the two areas under examination, are beneficial to economic development as they generate⁴⁸: *i*) improved production of public goods; *ii*) the achievement of economies of scale in public services; *iii*) the development of new economic opportunities; and *iv*) multiple capacity building.

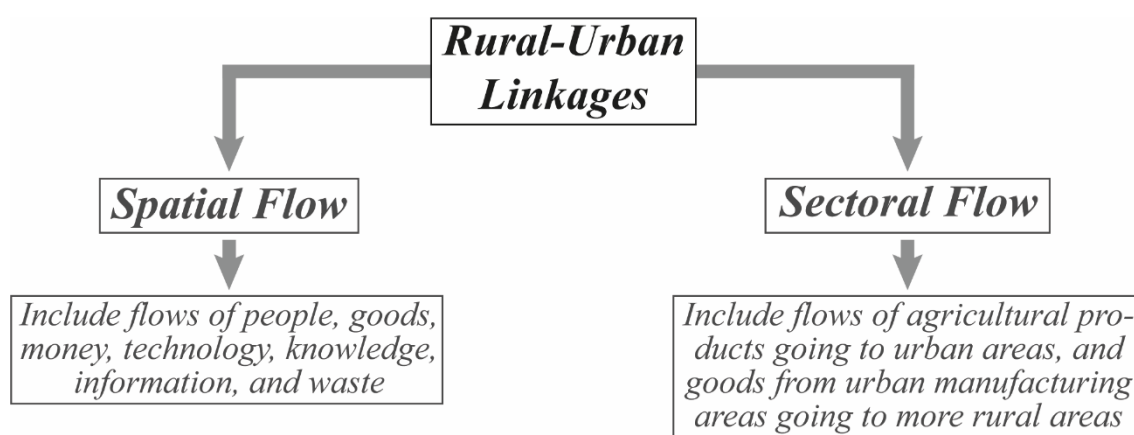


Figure 35 - Spatial and Sectoral Flow Related to the Rural-Urban linkages. Source: own elaboration from: (Akkoyunlu, 2013)

The term "*rural-urban linkages*" primarily represents all the flows of people, information and social relations that take place across the space with the aim of linking rural and urban areas (Tacoli, 2015). Secondly, it is important to highlight that the flow

⁴⁸ Source: https://read.oecd-ilibrary.org/urban-rural-and-regional-development/rural-urban-partnerships_9789264204812-en#page35 – visited on 9th December 2020

of agricultural products also plays a fundamental role in creating a bridge between rural areas and urban centers. In doing so, what is produced and cultivated in rural areas is destined, on the one hand, to urban markets in order to meet the needs of local consumers and, on the other hand, to regional, national and international markets (Tacoli, 2003).

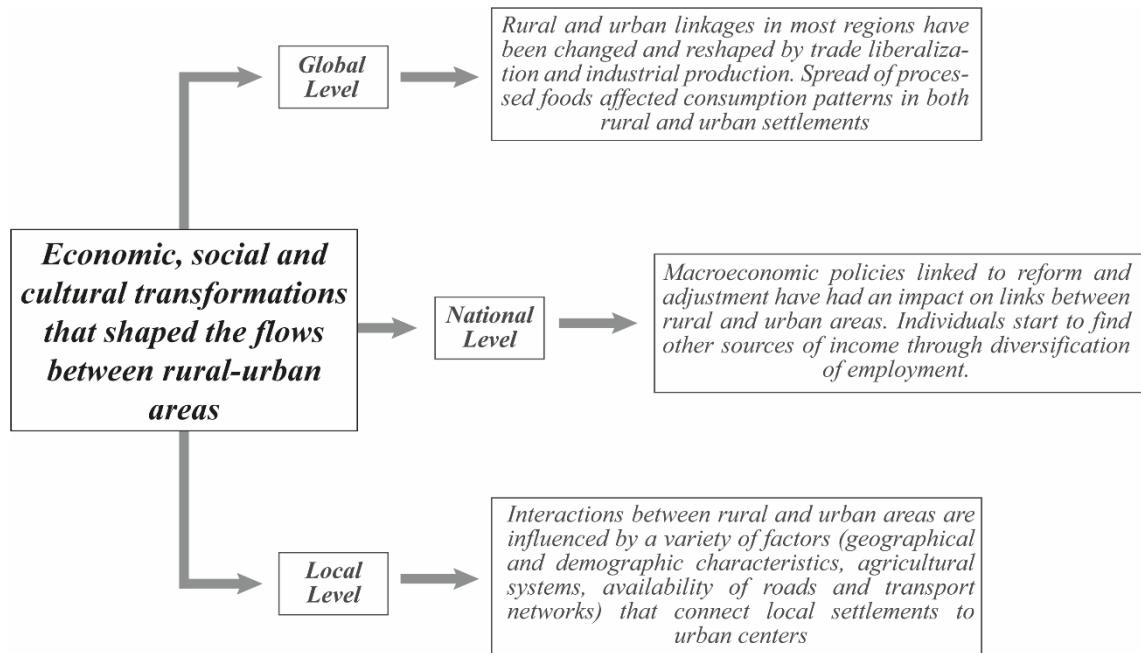


Figure 36 - Economic, social and cultural transformations that shaped the rural-urban areas. Source: own elaboration from: (Tacoli, 2003)

If at the local level, city administrations, strengthened by the practices of decentralization, are charged with sustaining the positive links between the countryside and the city (Tacoli, 2003), it is worth noting that at the administrative level, the physical boundaries of urban built-up areas often do not coincide with their urban boundaries and therefore do not respect the rural-urban dichotomy. As a consequence of this, the relationship between urban and rural areas is changing worldwide due to a number of factors, such as new settlement patterns, which can be linked to economic and social transformations (Ndabeni, 2015). From here, it is therefore possible to deduce how urban and rural areas should be viewed as the two ends of a spatial continuum.

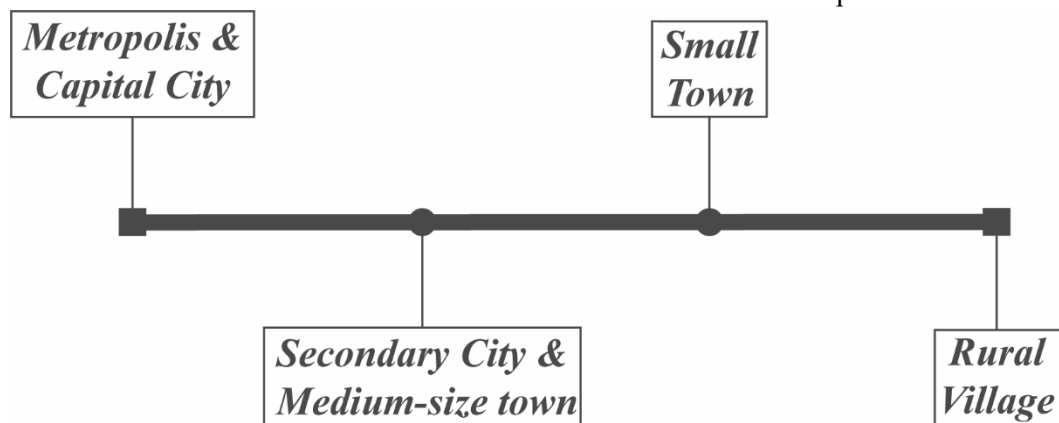


Figure 37 - Rural-Urban linkages in the Space Continuum. Source: own elaboration from: (Ndabeni, 2015)

Taking into consideration secondary cities, it should be noted that they play a key role depending on whether they are considered as part of a city system either locally or globally. Unlike metropolises and primary urban centres, secondary cities do not enjoy the political and investor attentions thus they need more attention as they are areas where

investment and technical support is needed (Ndabeni, 2015). While improving the connectivity of these hubs to larger cities or markets can create job opportunities, and improving the food system within them can create a more sustainable and resilient environment for their residents. In this regard, smaller intermediate settlements and rural areas can constitute systems of "*functional territories*", if better integrated, and thus support both sustainable urbanization and sustainable food systems (Ndabeni, 2015). Based on the preceding, rather than looking separately at urban and rural areas and what matters to each, it is critical to look at the linkages between them: this is where lasting change will come from⁴⁹.

2.1.3. Urban Agriculture

Today's reality of rapidly expanding conurbations on the one hand, and concerns about the impact of the current food system on the other, stimulates a global awareness of how to feed cities in a sustainable way (Jansma & Wertheim-Heck, 2020). The redefinition of physical, conceptual, and symbolic boundaries between the city and the countryside is certainly not a recent phenomenon. However, the consequent de-territorialization of food production-distribution-consumption systems has manifested itself in a very decisive way in recent decades, with obvious and dramatic consequences on the ability to manage and govern the flows of material and immaterial character related to food (Mazzocchi & Marino, 2020). Within this context, cities from all around the world, besides looking at local food systems as levers for a rethinking of many processes affecting urban sustainability and citizens' quality of life (Mazzocchi & Marino, 2018), have begun to understand the functions (social, economic and environmental) of peri-urban agricultural areas. By doing so they have started to implement policies to preserve, protect and recognize their value in terms of food supply to the city (Monaco, et al., 2017). As a result, sustainable urban agriculture and food systems have very quickly gone from being a "*general interest*" to attracting the attention of policy makers and planners in many cities, both in developed and developing countries⁵⁰. Despite this, progress in urban sustainability requires new forms of urban planning and design capable of generating knowledge before, during and after the urbanization process (Ahern, et al., 2014). Hence, against this background, urban agriculture (UA) can contribute significantly to advance in all dimensions of urban sustainability: ecological, social and economic (Gómez-Villarino & Ruiz-Garcia, 2020).

The expression "*Urban Agriculture*" represents a form of agriculture that is carried out predominantly in the densely populated areas of a city (Opitz, et al., 2016). However, within this discipline, two different sub-typologies are distinguished and are identified in: *Urban Gardening* and *Urban Farming*. Respectively, the first one, through a recreational use of public spaces, includes the set of all those activities that are fundamentally not aimed at economic profit and where the production of food is an opportunity to achieve primarily social goals (Scazzosi, 2016). The second typology, is instead described as a professional agriculture, carried out in metropolitan contexts, intra-urban areas or as forms of agri-civism, where the production process of agri-food goods and the formation of an income through the sale of the same are driving the motivations of the activity (Mazzocchi & Marino, 2020).

⁴⁹ Source: <https://www.iied.org/rural-urban-linkages> - visited on 15th December 2020

⁵⁰ Source: <https://ruaf.org/urban-agriculture-and-city-region-food-systems> - visited on 9th October 2020

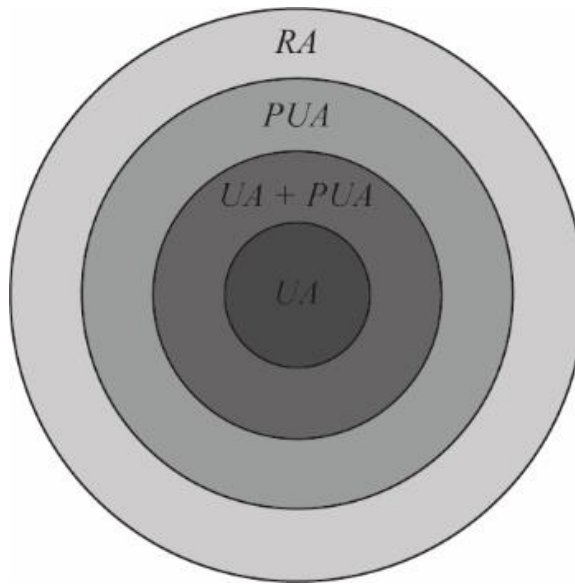


Figure 38 - Location of urban agriculture (UA), peri-urban agriculture (PUA) and rural agriculture (RA) within the urban-rural continuum. Source: own elaboration from: (Opitz, et al., 2016)

Despite this, urban agriculture is not the only discipline being practiced. Therefore, while some scholars have focused on urban areas, others have focused their attention on agricultural activities outside urban centers, thus defining peri-urban agriculture (PUA). The latter is considered as a residual form of agriculture carried out in transition areas between urban and rural areas with the aim of providing goods and services for both local and global markets. Furthermore UA and PUA have been discussed and promoted as strategies for sustainable development and often regarded as one entity, regularly labelled as "Urban and Peri-Urban Agriculture" (UPA) (Opitz, et al., 2016).

Tabel 9 - Main features of Urban Gardening and Urban Farming. Source: own elaboration from: (Mazzocchi & Marino, 2020)

Urban Gardening & Urban Farming		
	Urban Gardening	Urban Farming
Dimension	Between 0,5 and 2 hectares	Between 2 and < 20 hectares
Farming Models	Urban & Community gardens	Medium-sized farms
	Urban Farms	Multifunctional farms
	Small intensive farms	Intensive livestock farms
	Multifunctional farms	Extensive livestock farms
	Hobistic	Full-time occupation
Managerial & Productive Organization	Collective management	External workforce
	Part-time occupation	
	Associations and grassroots movement	Cooperative forms
	Community supported agriculture (CSA)	
	Family management	
Market	Self-production	Direct sales
	Direct sales	Solidarity Purchasing Groups (SPG)
	Farmers' markets	Urban markets
	Urban markets	School catering
	School catering	Large-scale retail trade
	Large- scale retail trade	Export
Food Production	Discrete production volume	High production volumes
	Fairly differentiated offer	Diversified production
	Fruit & vegetable production	Production & certification of origin

	<i>Dairy products</i>	<i>Dairy products locally processed</i>
	<i>Production for local markets</i>	<i>Production for urban market</i>
	<i>Diversified productions</i>	<i>Large-scale distribution & global markets</i>
Urban Regeneration	<i>Greening of the city</i>	<i>Improved storm-water management</i>
	<i>Reduction of heat island effect</i>	<i>CO₂ absorption</i>
	<i>Re-use of abandoned green spaces</i>	<i>Agricultural use of abandoned land</i>
	<i>Prevention against land consumption</i>	<i>Prevention against land consumption</i>
	<i>Biodiversity</i>	
	<i>Less food waste & loss</i>	<i>Less food waste & loss</i>
	<i>Provision of habitat for pollinators</i>	<i>Provision of habitat for pollinators</i>
Social Relations	<i>Social interactions for citizens</i>	<i>Relation of trust between producers and consumers</i>
	<i>Places of inter-generational exchange</i>	<i>Transparency of production process</i>
	<i>Places of leisure & recreational services</i>	<i>Less distance between producers and consumers</i>
	<i>Therapeutic activities</i>	<i>Spread of Alternative Food Networks</i>
	<i>Pedagogical training on food & agriculture</i>	<i>Strengthening of social capital</i>
	<i>Strengthening of the sense of community</i>	<i>Places of training in agriculture for young people</i>

2.1.4. Urban Food Policies and Strategies

In recent years, food and nutrition are assuming an increasingly relevant role in urban policies, becoming a priority axis of intervention to re-orient local processes of production and consumption according to more sustainable paradigms (Dezio & Marino, 2016). This is made possible both through innovative initiatives that involve both producers and consumers in the so-called Alternative Food Networks (AFN), and through the re-appropriation of the theme of food by the public actor (Dansero & Toldo, 2014). Within this particular context, cities and metropolitan areas constitute a strategic area of intervention aimed at orienting policy agendas towards more resilient models, recognizing agricultural production no longer as an activity antithetical to the city but rather as a phenomenon integrated within it (Marino & Cavallo, 2014). As evidence of this, it is possible to observe that, at the international level, the relationship between food and cities is increasingly placed in an intellectual context that aims at strengthening food systems in cities and their surrounding areas in order to arrive at an increasingly urbanized, sustainable, equitable, healthy and resilient world (Calori & Magarini, 2015). Following this logic, over the past 15-20 years, besides expanding the boundaries of food governance encompassing a broader range of issues and sectors not previously considered within food policy (Choen & Ilieva, 2020), many city administrations and social initiatives have become more aware of their influence on the food system. Consequently they start to be aware of including food policy within the municipal agenda developing their own strategies and institutional structures to shape the food system in a more systemic way (Doernberg, et al., 2019). Moreover, industrialized cities also stand out in this scenario, which, by taking a leading role in food policy, seek to reinvent food as an

urban system whose sustainability is closely intertwined with the sustainability of all other basic urban infrastructures such as: *i)* transportation; *ii)* housing; *iii)* water; and *iv)* waste management (Ilieva, 2017).

As already anticipated in the previous paragraphs, nowadays all cities in the world are required to constantly face multiple challenges that threaten food security therefore, they are in charge of developing "*Urban Food Policies*" (UFPs) with the aim of integrating hunger issues with food system goals (Filippini, et al., 2019). In this regard, the goal of UFPs should not only be to simply provide food to all individuals, but to ensure that this provision is met within the limits of environmental, economic, and social sustainability (Sonnino, 2014), thus addressing the current constraints of the urban food system (Coppo, et al., 2017). However, generally speaking, "*Food Policies*" (FPs) can be defined as decisions whose impact affects how people produce, obtain, consume, and dispose of their food. By looking backward, the first FP in urban areas were founded first of all in Toronto (1991), Belo Horizonte (1993) and San Francisco (1997) and only later arrived on the European continent. Despite this gap with the American continent, European cities have made a serious commitment to urban food policies by defining a set of food strategies coordinated, in turn, by international strategies such as the Milan Urban Food Policy Pact (MUFPP). From here, it can be seen that food policies are relatively new to local governments in European countries since agriculture and food have traditionally been subject to the corporatist regulatory regime at a European and national level (Doernberg, et al., 2019). Furthermore, as a result of the increase in global population, it is inevitable that the need to make the world we live in more sustainable will become greater. On this point, Jørgen Randers, a member of the distinguished Club of Rome and BI Norwegian Business School, argues that resilience to structural change must be overcome with smart policies that are able to give voters short-term benefits while solving the problems that arise in the long term⁵¹.

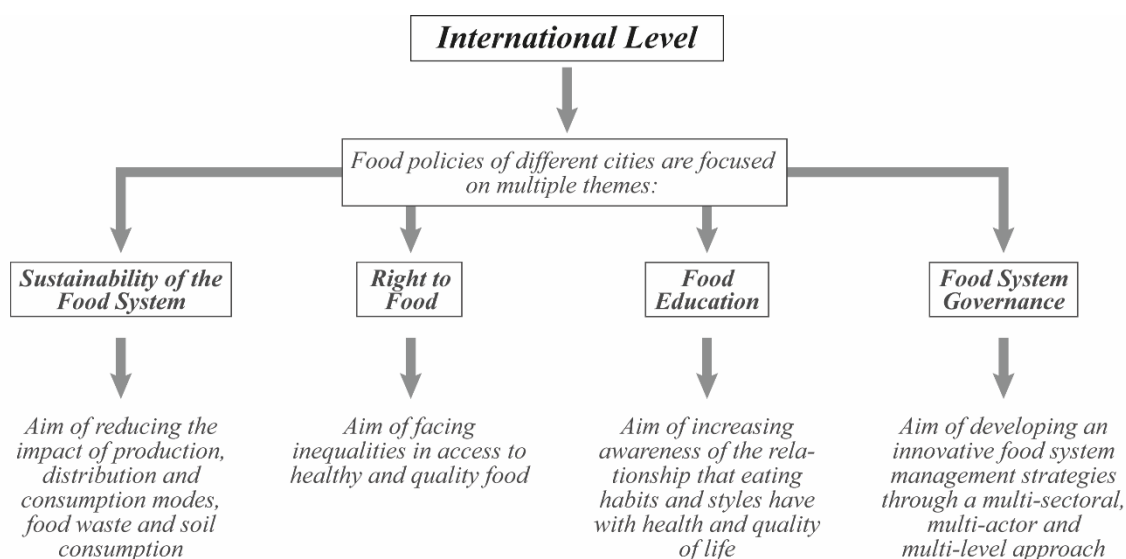


Figure 39 - Main themes of the food policies at the international level. Source: own elaboration from: (Daconto, 2017)

⁵¹ Source: <http://www.asiagreenbuildings.com/9642/south-korea-the-seoul-declaration-for-sustainable-cities/> - visited on 23rd December 2020

While a shift in the methodological approach to food policy making is taking shape in cities, it is inevitable that "*Urban Food Strategies*" (UFS) are also being defined. The latter can be considered as processes of policy making and sectoral planning that, systematically, consider food and its relationships to the urban metabolism (Coppo, et al., 2017). In addition, although there is no single and unique definition or model of UFS, food strategies can also be considered as a process of change that influences the food systems of cities (Moragues-Faus, et al., 2013). However, a crucial question for theorists is whether these urban food strategies are creating fundamental change in the food system or whether they are just examples of niches that fail to make a dent in dominant discourse and practices (Sonnino, 2014). According to Roberta Sonnino, the first examples of food strategies date back to 2006 and identify British and American cities as pioneers in this field. By placing food at the centre of urban policy agendas, UFS seek to create relationships and synergies among different stakeholder groups. In doing so, these processes generate as an out-put a series of written documents that can take the form of "*food charters*," "*manifestos*," "*vision documents*," "*action plans*" or just "*actual systemic strategies*" (Dansero, et al., 2015).

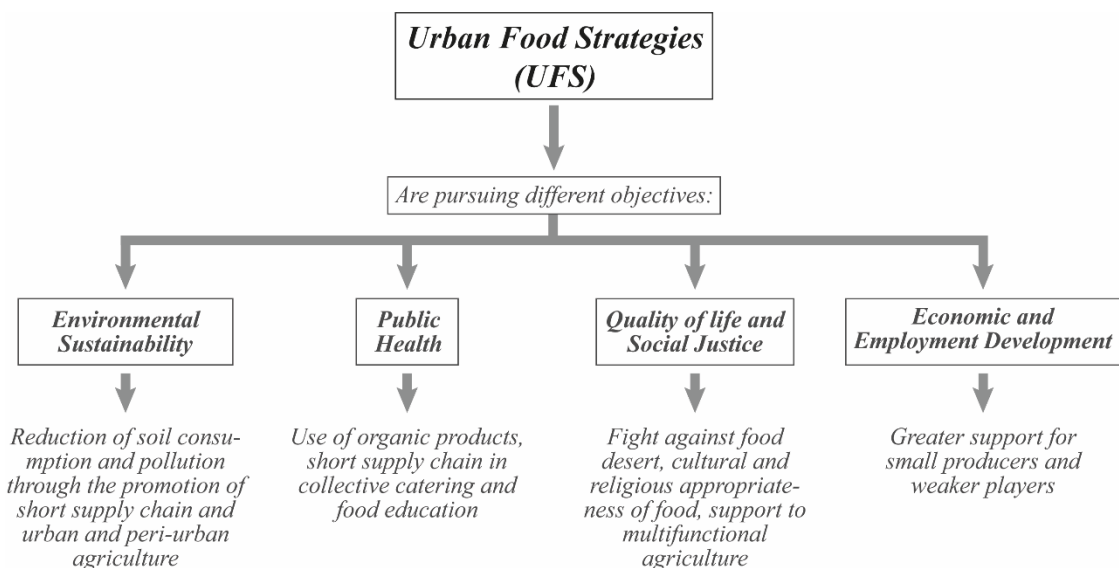


Figure 40 - Main objectives of the Urban Food Strategies (UFS). Source: own elaboration from: (Dansero, et al., 2015)

2.1.5. Urban Food Networks

Modern food production and consumption regimes have developed in recent years on the basis of productivity, research, profit, global supplies and resource exploitation, causing inevitably multiple externalities and negative impacts on social, economic and environmental scenarios that now seem to have reached a critical threshold (Matacena, 2016). In this particular scenario, growing concerns about sustainability and environmental issues among society have pushed towards the adoption of new and alternative approaches regarding food consumption. This is especially true in the case of food choices as more and more consumers are showing interest in the local and global impacts of their daily consumption habits (Carzedda, et al., 2018). Nonetheless, in order to successfully address these challenges, it will be important to conserve and protect natural resources throughout the food chain, since how these are used affects not only the final stage of consumption but also all previous stages (Opitz, et al., 2017).

For these reasons, people began to think and devise alternative solutions to be included in the traditional food industry. Hence, it can be seen how the initiation of the "*alternative*" food movement can be traced back to the early 1970s where the first forms of Alternative Food Networks (AFNs) appeared (Randelli & Rocchi, 2017). While on the one hand these AFNs are identified as innovative ways to produce, deliver, and consume food with the aim of generating new opportunities and challenges for social analysis (Alberio & Moralli, 2019), it is important to note that these food networks emerged, in developed economies, as a reaction to two fundamental trends in the globalized food system (Randelli & Rocchi, 2017). According to Ferne Edwards, these alternative food networks also support the creation of new patterns of exchange capable of promoting a return to community food production while also demonstrating an ongoing commitment to social, economic, and environmental justice throughout the food chain (Edwards, 2016).

Looking at the North American context, it is possible to identify four different types of AFNs: the first represents the organizations that support farmers; the second represents all the non-profit organizations that focus on nutrition education, cooking demonstrations and disease prevention, the third one refers to environmental groups advocating organic, free-range hormone- or antibiotic-free meat and open areas for raising livestock while the last one, instead, represents all the organizations that advocate workers' and producers' rights and/or social justice and food security for oppressed groups (Fourat, et al., 2019). Referring instead to the European context, it is important to note that the term "*Alternative Food Networks*" is used as a synonym for Short Food Supply Chains (SFSCs) in which consumers, farmers or other producers are in direct contact with each other, as is the case of farmers' markets, Community Supported Agriculture (CSA) and Solidarity Purchasing Groups (SPGs) (Dansero & Pettenati, 2015).

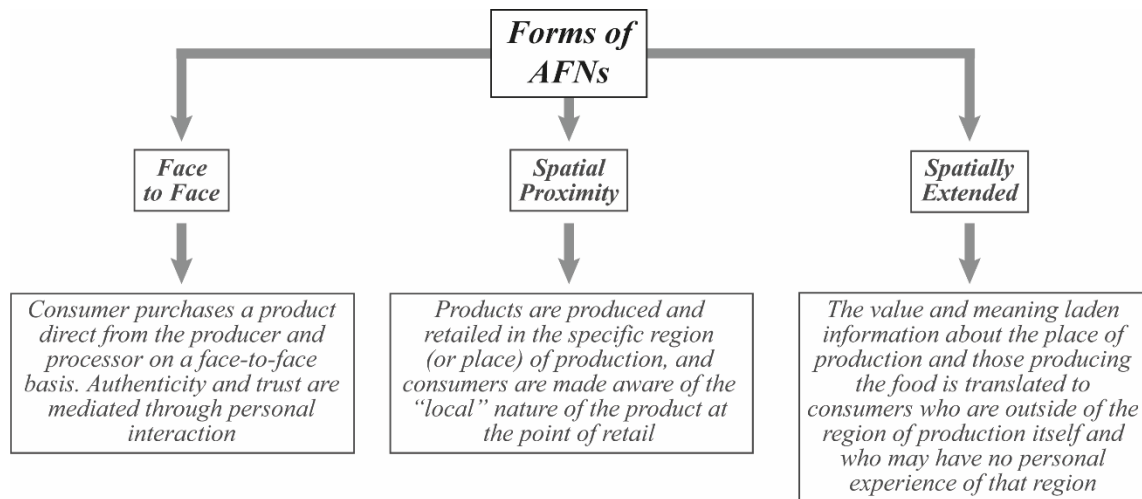


Figure 42 - Different forms of Alternative Food Networks. Source: own elaboration from: (Marsden, et al., 2000)

Since AFNs' aim, explicitly or implicitly, at a spatial reorganization of food systems passing from a dominant globalized food geography to the construction of a new relationship between food and places, it is possible to identify four of the goals that these alternative networks try to achieve: *i)* relocation of food systems; *ii)* re-organization; *iii)* re-embeddedness of food in places, local ecologies and social networks; *iv)* re-territorialization (Dansero & Pettenati, 2015). In addition, while urban agriculture is located in predominantly urban areas, alternative food networks take place primarily in the urban-rural interface and are classified as part of peri-urban agriculture. In addition, while urban agriculture is located in predominantly urban areas, alternative food networks take place primarily in the urban-rural interface and are classified as part of peri-urban agriculture.

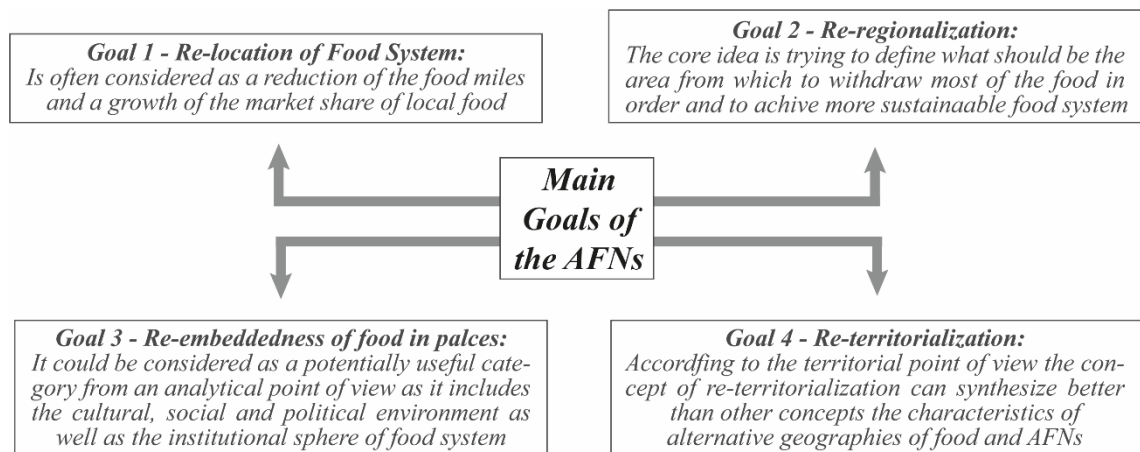


Figure 41 - Main goals of the AFNs. Source: own elaboration from: (Dansero & Pettenati, 2015) and (Dansero & Puttilli, 2014)

In doing so, AFNs are for the most part networks capable of bringing together urban dwellers and the food market (Opitz, et al., 2017). Nonetheless, within such a food system it is even more difficult to define the boundaries between traditional habits, "conventional" food practices and alternative food (Dansero & Puttilli, 2013). Therefore, analyzing the Italian national context and in particular the city of Turin, it is possible to recognize two of the typologies previously described: "Farmers' Markets" and the "Solidarity Purchasing Groups" (SPGs).

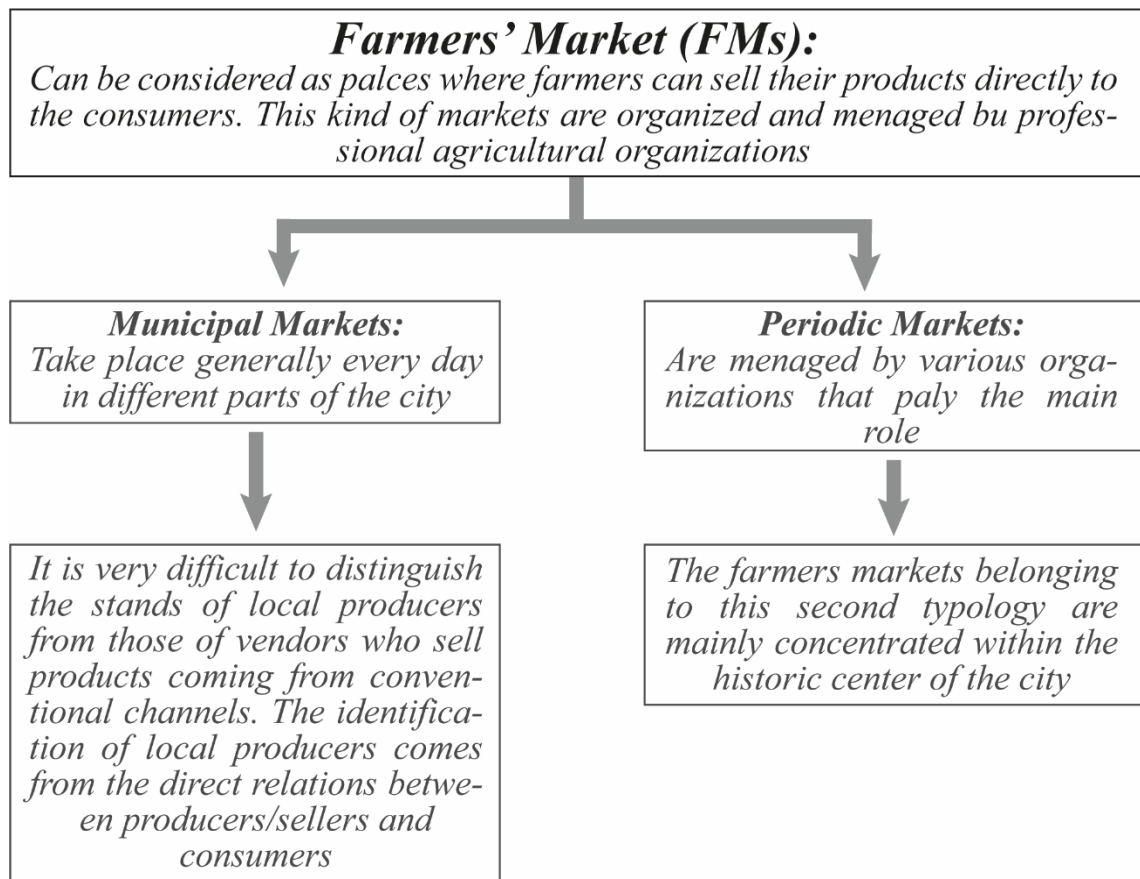


Figure 43 - First typology of Alternative Food Networks within Italian territory. Source: own elaboration from (Dansero & Pettenati, 2015):

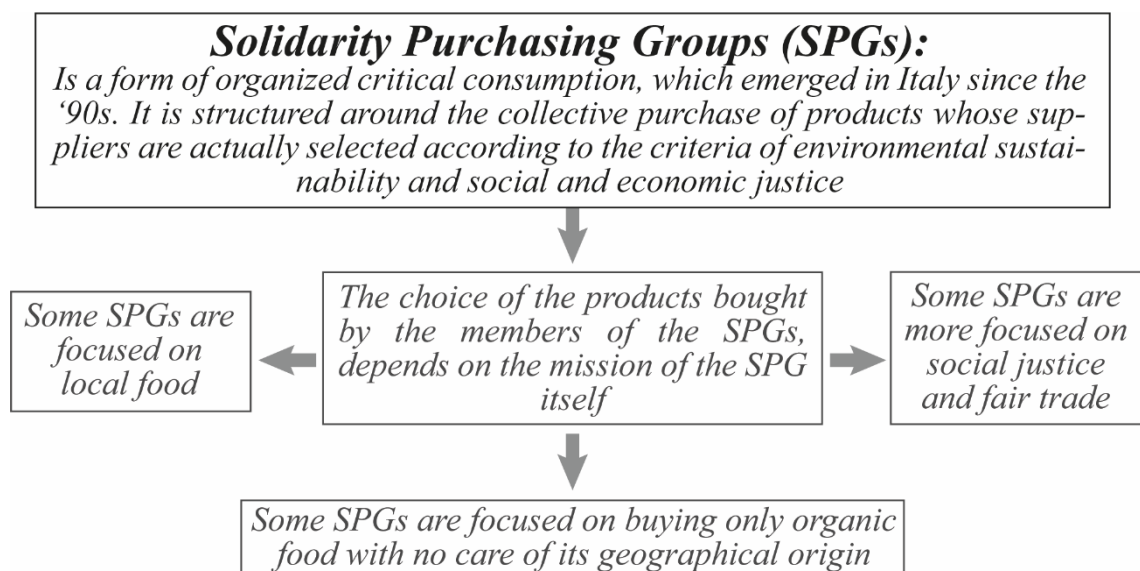


Figure 44 - Second typology of Alternative Food Networks within Italian territory. Source: own elaboration from (Dansero & Pettenati, 2015)

Analysis of the literature

The main purpose of this paragraph is to offer a complete and detailed overview of all the literature taken into consideration for the analysis and writing of this first part of the second chapter. All this was made possible thanks to a process of literature review through which the different aspects and facets of the theme in question (Food Planning) were acquired and learned. However, in order to be able to simplify the analysis and facilitate the comparison of the different documents examined, the following table was created. Inside this recap table, for each bibliographic reference, the respective main characteristics were indicated. The latter can therefore be identified i) in the main theme of the document; ii) in the keywords identified by the authors; iii) in the method used to write the article; iv) in the geographical location, if any, to which the document refers; and v) in the actors identified and involved in the processes explained by the authors. Most of the texts taken into consideration, as can be seen by carefully analyzing the table, are characterized by a methodology focused on the survey and detailed analysis of the respective main theme, as the issues addressed are clearly described and listed. In some papers, however, the authors have referred to several case studies (mainly located in America, Canada, UK and Europe) to offer not only a theoretical view of the topic but also a practical application of the concepts expressed. On the other hand, the methods that have been least used are interviews and focus groups, respectively. Although the reason for this exclusion is not easily identifiable, it is possible to hypothesize that it is due to the lack of involvement of the civil community and citizens in finding information useful to the author in order to draft the document.

Tabel 10 - Analysis and Comparison of the literature related to Food Planning. Source: own elaboration

Analysis and comparison of the Literature								
Reference	Main Theme	Keywords	Method					Actors involved
			Interviews	Survey & topic analysis	Case studies	Focus group	Literature reviews	
Morgan & Sonnino, 2010	<i>Foodscap e</i>	<i>Food security</i>			X			<ul style="list-style-type: none"> • London • New York
		<i>Sustainable development</i>						
		<i>Urban governance</i>						
Nasr & Komisar, 2016	<i>Urban Food Planning</i>	<i>Food system</i>		X	X			<ul style="list-style-type: none"> • North America
		<i>Planning practice</i>						
Morgan, 2013	<i>Urban Food Planning</i>	<i>Food security</i>		X				
		<i>Food planning</i>						
		<i>Food system</i>						
Calori, et al., 2017	<i>Urban Food Planning</i>	<i>Urban food policies</i>			X			<ul style="list-style-type: none"> • Turin • Milan <ul style="list-style-type: none"> • Action-Researchers • Consultants • Actors of the food system
		<i>Food planning</i>						
Moragues-Faus & Morgan, 2015	<i>Foodscap e</i>	<i>Food policy</i>			X			<ul style="list-style-type: none"> • Bristol • Malmö <ul style="list-style-type: none"> • Civil society • Municipal Governments
		<i>Sustainability</i>						
		<i>Urban governance</i>						

Moragues-Faus, et al., 2013	<i>Urban food strategies</i>	<i>Food strategies</i>		X		X			• Local actors
Cabannes & Marocchio, 2018	<i>Urban food planning</i>	<i>Food system</i>						• Global North • Global South	
		<i>Food system planning</i>					X		
		<i>Urban food planning</i>							
Raja, et al., 2018	<i>Food connections through Planning</i>	<i>Food system</i>		X				• United States	• Community stakeholder • Local Governments
		<i>Urban planning</i>							
		<i>Community of innovation</i>							
		<i>Communities of opportunity</i>							
Carlsson, et al., 2017	<i>Food System Sustainability</i>	<i>Sustainable Food System</i>		X					
		<i>Community Development</i>							
		<i>Sustainable Development</i>							
Raja, et al., 2008	<i>Community and Regional Food Planning</i>	<i>Food Environment</i>			X			• United States	• Planners • Planning Organizations • Mayors
		<i>Plan Making</i>							
		<i>Healthful Foods</i>							
Tacoli, et al., 2015	<i>Rural-Urban Migration</i>	<i>Urbanization</i>		X					
		<i>Rural-Urban Linkages</i>							
		<i>Urban Poverty</i>							
		<i>Migration</i>							
Taguchi & Santini, 2018	<i>Food System & Rural-Urban Linkages</i>	<i>Rural-Urban Linkages</i>		X					
		<i>Food System</i>							
		<i>Secondary Cities</i>							
Calori & Magarini, 2015	<i>Food Policies for Sustainable Cities</i>	<i>Food</i>		X	X			• Bristol • Ghent • London • Melbourne • Milan • New York • San Francisco • Toronto • Vancouver	• Mayors • Food Council • Local communities • Private actors • Public actors
		<i>Urban Food Policies</i>							
		<i>Urban Food System</i>							
		<i>Governance</i>							
Sonnino, 2019	<i>Feeding Urban Areas</i>	<i>System Thinking</i>		X					• City governments • Food producers • Food consumers
		<i>Participatory food governance</i>							
		<i>Trans-local collaboration</i>							
Hatcher, 2017	<i>Rural-Urban Linkages</i>	<i>Sustainable Development</i>		X					
		<i>Environmental Protection</i>							
		<i>Rural diversification</i>							
Tacoli, 2003	<i>Rural-Urban Linkages</i>	<i>Rural Development</i>		X		X			• Local producer • Farmers
		<i>Urban Development</i>							
		<i>Spatial flows</i>							

Ndabeni, 2015	<i>Rural-Urban Linkages</i>	<i>Spatial flow</i>		X					<ul style="list-style-type: none"> • Farmers • Rural producers • City dwellers • Local administration
		<i>Sectoral flow</i>							
		<i>Rural-Urban connections</i>							
Tacoli, 2015	<i>Role of Rural-Urban Linkages</i>	<i>Urban centres</i>	X					<ul style="list-style-type: none"> • Expo 2015 	
		<i>Rural areas</i>							
		<i>Income diversification</i>							
Jansma & Wertheim-Heck, 2020	<i>Urban Planning for agriculture</i>	<i>Urban Agriculture</i>			X		X	<ul style="list-style-type: none"> • Almere 	<ul style="list-style-type: none"> • Local government • Farmers • Local authorities
		<i>Urban Planning</i>							
		<i>Urban Development</i>							
Mazzocchi & Marino, 2020	<i>Urban System</i>	<i>Agriculture</i>		X					
		<i>City Regions</i>							
		<i>Urban policies</i>							
Mazzocchi & Marino, 2018	<i>New Food Economics</i>	<i>Local Food System</i>		X					
		<i>Urban Sustainability</i>							
		<i>Food System Sustainability</i>							
Monaco, et al., 2017	<i>Food Production and Consumption</i>	<i>Metropolitan Areas</i>			X		X	<ul style="list-style-type: none"> • Berlin • Ljubljana • London • Milan • Rotterdam 	
		<i>Urban Agro-Food System</i>							
Ahern, et al., 2014	<i>Ecosystem Services</i>	<i>Citizen science</i>		X					<ul style="list-style-type: none"> • Stakeholder • Planning professionals • Urban dwellers
		<i>Ecosystem services</i>							
		<i>Transdisciplinarity</i>							
Gómez-Villarino & Ruiz-García, 2020	<i>Urban Agriculture and Sustainable Development</i>	<i>Urban Agriculture</i>		X	X			<ul style="list-style-type: none"> • Lugo 	<ul style="list-style-type: none"> • Stakeholder • Decision makers • Citizens
		<i>Sustainable Development</i>							
		<i>Ecosystem Services</i>							
Opitz, et al., 2016	<i>Differences between Urban and Peri-Urban Agriculture</i>	<i>Urban Food System</i>					X	<ul style="list-style-type: none"> • Global North 	
		<i>Urban Gardening</i>							
		<i>Metropolitan agriculture</i>							
Dezio & Marino, 2016	<i>Food and Urban policies</i>	<i>Sustainable paradigms</i>		X					
		<i>Alternative Food Networks</i>							
		<i>Urban Food System</i>							
Dansero & Toldo, 2014	<i>Local Food Policy</i>	<i>Nutrire Torino Metropolitana (NTM)</i>			X			<ul style="list-style-type: none"> • Turin 	
Marino & Cavallo, 2014	<i>Agriculture, Food and Cities</i>	<i>Role of Agriculture</i>		X					
		<i>Resilience</i>							
		<i>Social-Ecological Systems</i>							

Choen & Ilieva, 2020	<i>Boundaries of Food Policies</i>	<i>Food Governance</i>							
		<i>Urban Food Policy</i>			X		X	• New York	
		<i>Equity</i>							
Doemberg, et al., 2019	<i>Urban Food Policies</i>	<i>Food Policy</i>	X						
		<i>Food Planning</i>			X	X		• Germany	• Urban Municipalities
		<i>Policy Implementation</i>							
Ilieva, 2017	<i>Urban Food System Strategies</i>	<i>Urban Food Strategies</i>						• New York	
		<i>Local Food System</i>			X			• Philadelphia	
		<i>Sustainable Development</i>						• Los Angeles	
Sonnino, 2014	<i>Food Security and Food Strategies</i>	<i>Food Security</i>						• Chicago	
		<i>Urban Food Strategies</i>						• Toronto	
		<i>Local Food System</i>		X					• Local governments • Policy makers • Intermediary actors • Food producers and Consumers
Coppo, et al., 2017	<i>Urban Food Strategies</i>	<i>Food Security</i>						• London	
		<i>Urban Food Strategy</i>						• Brighton	
		<i>Sustainable Food Assessment</i>			X		X	• New York	
Daconto, 2017	<i>Accessibility to Food Resources</i>	<i>Quality of life</i>						• Toronto	
		<i>Food Habits</i>						• Philadelphia	
		<i>Accessibility to Food Resources</i>		X	X			• Calgary	
Dansero, et al., 2015	<i>Food Chain</i>	<i>Urban Food Strategies</i>						• Vancouver	
		<i>Globalized Food System</i>		X				• Lyon	
		<i>Alternative Food Paradigm</i>						• Milan	
Matacena, 2016	<i>Alternative Food Networks</i>	<i>Urban Food Policy</i>						• Bruxelles	
		<i>Food System</i>		X				• Bristol	
		<i>Food Security</i>							• City administration • Older people • Policy makers
Carzedda, et al., 2018	<i>Alternative Food Networks</i>	<i>Alternative Food Networks</i>							
		<i>Perceived Quality</i>		X	X			• Northen Italy	
		<i>Consumer Attitude</i>							
Opitz, et al., 2017	<i>Alternative Food Networks</i>	<i>Rural-Urban Interface</i>							
		<i>Community-Supported Agriculture</i>		X			X	• Germany	• Consumers • Farmers

Randelli & Rocchi, 2017	<i>Alternative Food Networks</i>	<i>Consumer Sustainability</i>							<ul style="list-style-type: none"> • Producer • Consumers • Firms • Government agencies • Universities
		<i>Technological innovation system</i>					X		
Edwards, 2016	<i>Alternative Food Networks</i>	<i>Local Food Movement</i>		X					
		<i>Short Food Supply Chain</i>							
Fourat, et al., 2019	<i>Alternative Food Networks</i>	<i>Social Inclusion</i>	X						<ul style="list-style-type: none"> • Consumer Food Cooperatives • Member of community organizations
		<i>Food Democracy</i>				X			
		<i>Consumers Food Cooperative</i>							
Dansero & Pettenati, 2015	<i>Alternative Food Networks</i>	<i>Places of Consumption</i>	X						<ul style="list-style-type: none"> • Local producers • Farmers • City dwellers • Solidarity Purchasing Groups
		<i>Places of Production</i>			X			<ul style="list-style-type: none"> • Turin • Roero 	
		<i>Rural-Urban Areas</i>							
Marsden, et al., 2000	<i>Food Supply Chain</i>	<i>Short Supply Chain</i>							
		<i>Rural Development</i>			X			<ul style="list-style-type: none"> • Wales 	
Opitz, et al., 2017	<i>Alternative Food Networks</i>	<i>Community-Supported Agriculture</i>	X						<ul style="list-style-type: none"> • Germany • Consumers • Producers
		<i>Self-harvest Gardens</i>							
		<i>Urban-Rural</i>							
Dansero & Puttilli, 2013	<i>Alternative Food Networks</i>	<i>Territoriality</i>							<ul style="list-style-type: none"> • Consumers • Producers
		<i>Alternative Food Networks</i>			X			<ul style="list-style-type: none"> • Mazze • Ivrea • Biella • Turin 	
		<i>Rural Development</i>							

2.2. European Projects review

Throughout the years, many programs and projects have been developed and consolidated on the European scene which, directly or indirectly, have tackled issues related to food and nutrition. Within this section, various European projects have been chosen in order to analyze them in detail with the aim of understanding their similarities and differences. The choice of these European projects was made in different ways. First of all, most of the projects in question was found through a search by keywords within the portal "*Cordis*" of the European Union from which it was possible to extrapolate the technical sheet of each project. Second of all, also the online portal "*JPI Urban Europe - the knowledge hub for urban transitions*" proved to be useful especially with regard to the "*CityFood*" project. Finally, it is also important to underline how the literature review process, previously addressed, allowed to identify a European project (Agromere) concerning agriculture and food issues. Looking at all the European projects taken into consideration, it can be seen that, on the one hand, some of them focus more on aspects related to proper nutrition and healthy lifestyles, while, on the other, they deal with issues of sustainability of the food system and their respective territorial aspects.

2.2.1. Agromere



Figure 45 - Geographical location of the city of Almere (Netherlands). Source: own elaboration

The city of Almere (Netherlands), located 30 kilometers east of the city of Amsterdam, lies on the island of Flevopolder and covers an area of 249 square kilometers. The city has been recently founded since the first house was built only in 1976. The territory is divided into six main districts⁵² (Almere Stad, Almere Haven, Almere Buiten, Almere Hout, Almere Poort and Almere Pampus) within which, according to the demographic data of 2018, almost 208,000 inhabitants live⁵³. Almere's project is unique in the Netherlands because, it consists of an urban center surrounded by several satellite cities. Even today, this particular conformation is very visible, such that the city is composed of many more green

spaces within its boundaries than the average Dutch city. Despite this, the phenomenon of agriculture has never been particularly and properly developed except for an urban farm located on the edge of the city (Jansma & Visser, 2011). According to Jansma and Visser, due to the growing need for housing in the Amsterdam area and the almost total

⁵² Source: <https://it.wikipedia.org/wiki/Almere> - visited on 15th october 2020

⁵³ Source: <https://ugeo.urbistat.com/AdminStat/it/nl/demografia/dati-sintesi/almere/23056015/4> - visited on 15th october 2020

absence of places to build, it is expected that by 2030 the city of Almere will see a strong population increase to 350,000 inhabitants, making it the fifth largest city in the Netherlands. Following the decision of the Almere City Council, ecology and sustainability have been included in the plans and documents useful to regulate this expansion. These two disciplines immediately proved to be two of the main issues on which it was necessary to focus. For these reasons, in order to start an expansion that was as effective as possible, it was essential to identify and define what were the "*Principles of Almere*" (Roorda, et al., 2011)

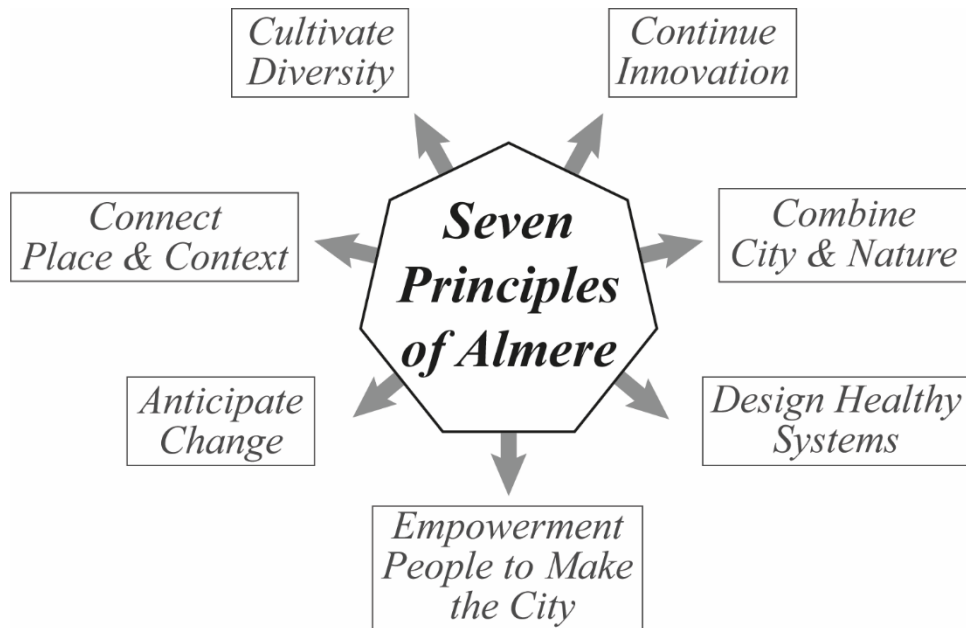


Figure 46 - Seven Principles of Almere. Source: own elaboration from: (Roorda, et al., 2011)

In 2005, following this process of expansion, a research project was defined, and was named "*Agromere*". Over the years, the project itself began to evolve more and more, until it became a combined design project in which several stakeholders co-operated. The main objective of this project was to explore opportunities to re-integrate agriculture into the modern life of Almere city and it was for these reasons that it was suggested to the city council to include urban agriculture within the city's development plans. In other words, the aim of the Agromere project was to create a process aimed at creating a new residential district in which agriculture was fully integrated into city life (Jansma, et al., 2008). In order to achieve this goal, the support and active participation of the various stakeholders who had the task of adapting urban agriculture as an added value in the process of sustainable development of the city was also considered fundamental. In addition, the stakeholders involved in the Agromere project were representatives of local farmers, the provinces of Almere, Flevoland and Zeewolde, nature and environmental organizations, the board of small and medium-sized enterprises in the area and the commercial promoters of the cities (Jansma & Visser, 2011). Even before starting the actual design phases, a number of design principles have been developed and agreed with the respective stakeholders. In this regard, the portion of territory in which the Agromere project would later develop, was designed as a city district with a total area of 250 hectares. Of this total surface area, 70 hectares were destined to houses and infrastructures while the remaining 180 hectares were destined to agricultural activities. Moreover, four

different urban farms were designed based on what were the needs of families in terms of food and other products (Jansma & Visser, 2011): *i)* vegetables and fruit with chickens and cereals; *ii)* greenhouses with community services; *iii)* cultivation of arable crops with beef cattle; *iv)* dairy and community services.

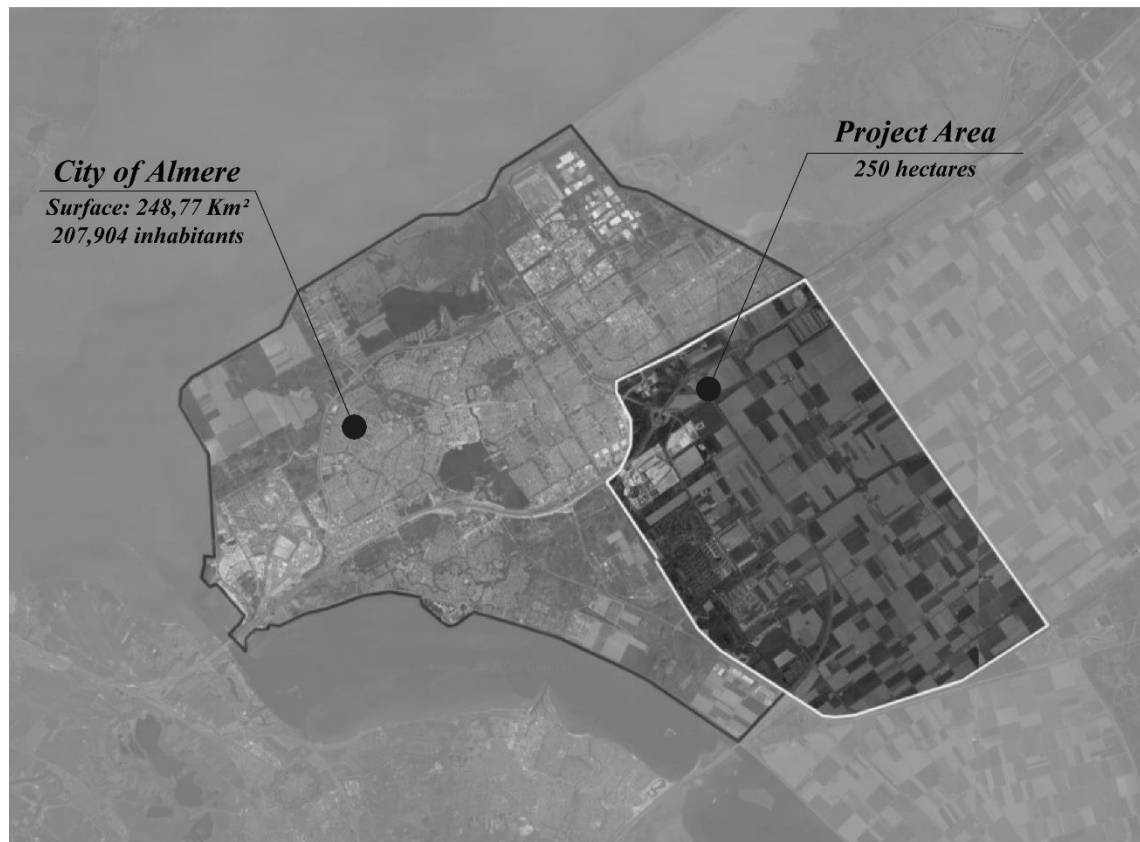


Figure 47 - Territorial framework of the project area. Source: own elaboration from: <https://www.google.it/maps/place/Almere,+Paesi+Bassi/>

Like many other projects in which there is a co-operation between multiple stakeholders, the Agromere project required a careful, solid and energetic management. In the early stages, stakeholders were alienated from the idea of urban agriculture because they did not understand its role in urban planning. However, through a stakeholder analysis that highlighted their respective interests and motivations, it was possible to create a link between urban agriculture and the stakeholders involved (Jansma & Visser, 2011). The interweaving of urban and rural elements within the Agromere project, allows to offer to each subject involved new perspectives. For example, "*urban*" residents benefit from more opportunities for health care recreation and after school care of children on a farm, a greener living environment, and fresh products every day at the expense of fewer "*food kilometres*" (less impact on the environment). For the agricultural sector, instead, benefits include a closer link with urban residents and greater involvement in regional development plans, which translates into greater continuity in terms of business operations. Despite the completion of the Agromere project, the promotion of urban agriculture within the area continues thanks to the Development Centre for Urban Agriculture established in 2011 by a group of stakeholders. The ambitions of this development center are to initiate, direct and link urban agriculture initiatives in order to further stimulate its development within the city of Almere (Jansma & Visser, 2011).

2.2.2. Urbact III

For about 15 years now, the URBACT programme has proved to be a European territorial cooperation programme whose objective is to promote integrated and sustainable urban development in European cities. Moreover, this programme, co-financed by the European Regional Development Fund and the 28 Member States⁵⁴, has the mission to enable cities to work together to develop integrated solutions to common urban challenges by networking, learning from one another's experiences, drawing lessons and identifying good practices to improve urban policies⁵⁵.



Figure 48 - Representation of the URBACT programme member States. Source: own elaboration from: <https://interreg.eu/programme/urbact-iii/>

Following the success of the two previous programmes (URBACT I and URBACT II), the URBACT III programme has been developed from 2014 in order to continue promoting sustainable integrated urban development and contributing to the implementation of the European Strategy 2020. The programme is, however, organized around four main objectives:

- 1) **Capacity for Policy Delivery:** to improve the capacity of cities to manage sustainable urban policies and practices in an integrated and participative way.
- 2) **Policy Design:** to improve the design of sustainable urban policies and practices in cities.

⁵⁴ The Member States are: Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Germany, Denmark, Estonia, Greece, Spain, Finland, France, Croatia, Hungary, Ireland, Italy, Lithuania, Luxembourg, Latvia, Malta, Netherlands, Poland, Portugal, Romania, Sweden, Slovenia, Slovakia and United Kingdom. Source: <https://interreg.eu/programme/urbact-iii/> - visited on 16th October 2020

⁵⁵ Source: <https://interreg.eu/programme/urbact-iii/> - visited on 16th October 2020

- 3) **Policy Implementation:** to improve the implementation of integrated and sustainable urban strategies and actions in cities.
- 4) **Building and Sharing Knowledge:** to ensure that practitioners and decision-makers at all levels have access to knowledge and share know-how on all aspects of sustainable urban development in order to improve urban development policies.

In order to achieve these objectives, three different types of intervention are developed that respectively concern *i)* transnational exchanges; *ii)* capacity building; *iii)* capitalization and dissemination⁵⁶. However, the URBACT programme helps and supports member cities to develop pragmatic solutions that are new and sustainable but, above all, that integrate environmental, economic, social and governmental issues⁵⁷. In this regard, it is important to underline that in each of these areas, over the years, multiple projects have been launched. Some of these are already completed as in the case of the "Agri-Urban" project, while others continue to be operative as the "Food Corridors" project⁵⁸. Respectively, the "Agri-Urban: Re-thinking agri-food production in small and medium cities" programme, launched in 2016 and concluded in 2018, is an action planning network of eleven European cities that by sharing good practices, knowledge and expertise aim to reach one common sustainable vision. Within this project every single city start from its peculiar landscape and then upgrades its ideas of agriculture and food economy to generate innovation, creativity and opportunities for local business, young startups and for traditional and new stakeholders⁵⁹.

Since an early stage of the project, it was clear that a sustainable and integrated urban approach was needed to deal with the main issues that must be addressed: an inclusive, coherent and reflexive urban-rural food governance system; a more solid social and physical infrastructure to reduce the distance between producers and consumers, and to promote circular economy⁶⁰. The "Food Corridors" project, instead, encourages the creation of a network of European cities engaged in the design of food plans that can extend from urban and peri-urban areas through a corridor that facilitates urban-rural reconnection. This approach encourages the generation of production and consumption environments based on economic, social and environmental sustainability and integrated into development policies (URBACT, 2020). Moreover, the pioneering initiatives of the Food and Agriculture Organization (FAO) regarding the promotion of the City-Region Food System Programme allowed to explore the options and generated a methodology that guided the launch of the project in question. However, there are also other key policy principles, such as the "right to food", the "right to the city" and the "governance of urban systems" that have also been incorporated into the Food Corridors project (URBACT, 2020).

⁵⁶ Source: <https://urbact.eu/urbact-glance> - visited on 16th October 2020

⁵⁷ Source: <https://urbact.eu/> - visited on 16th October 2020

⁵⁸ Source: <https://urbact.eu/all-networks?topic=82> - visited on 16th October 2020

⁵⁹ Source: <https://www.youtube.com/watch?v=3apGk-G3fm0&feature=youtu.be> – visited on 16th October 2020

⁶⁰ Source: <https://urbact.eu/agri-urban-legacy> - visited on 16th October 2020

2.2.3. Supurbfood

The term "*SUPURBFOOD*" represents the acronym of a research project whose title is "*Towards sustainable mobility of urban and peri-urban food supply*". This project, which was funded by the Seventh Framework Programme for Research and Technological Development of the European Commission, was launched in November 2012 and remained in force until October 2015. Nevertheless, paying particular attention to the international context, within this project an attempt was made to bring together, on the one hand, the different research groups and small-medium enterprises (SMEs) operating in the agri-food sector from seven different European countries (Netherlands, Belgium, United Kingdom, Spain, Italy, Latvia and Switzerland) with the International Network of Resources Centres on Urban Agriculture and Food Security (RUAF)⁶¹, on the other. This International Network, focuses itself more on food and agricultural issues related to urban and peri-urban contexts (Supurbfood, 2013).

The structure of the project, is made up of two interconnected processes: the first, respectively, refers to the phenomenon of population growth on a global scale which will mainly affect cities and metropolitan areas as it is expected that by 2050 the world population will reach 9 billion of which 75% will be urbanized. The second process, by contrast, deals with the manifold challenges that are generated by the creation of a sustainable, fair and healthy food supply system that is able to feed the entire world population (Supurbfood, 2013). According to Han Wiskerke, coordinator of the SUPURBFOOD project, these challenges can be attributed to food waste, fresh water use, dependence on fossil fuels, loss of biodiversity and social, economic and spatial inequalities in the availability, access and affordability of food. On the basis of these two processes, the main objective of the SUPURBFOOD project is to improve the sustainability of agriculture and food supply within European city-regions and in the Global South by developing together with SMEs, a number of innovative approaches for *i*) short-term food supply; *ii*) water management and recycling; *iii*) multifunctional land use in city-regions. In this regard, the city-regions involved in the project are:

- City-Region of Rotterdam (The Netherlands)
- City-Region of Ghent (Belgium)
- City-Region of Bristol (United Kingdom)
- City-Region of Zurich (Switzerland)
- Metropolitan Area of Vigo (Spain)
- Metropolitan Area of Rome (Italy)
- Region of Greater Riga (Latvia)

⁶¹ The RUAF Global Partnership on Sustainable Urban Agriculture and Food Systems is a partnership of strategically selected expert institutions. The partnership brings together cities, research institutes and civil society organisations with a recognised track record in urban and peri-urban agriculture and urban food systems. The partnership is a platform for learning and knowledge brokering between science, policy & practice. RUAF strongly believes in the benefits of interdisciplinary work and multi-stakeholder learning. Source: <https://ruaf.org/who-we-are/> - visited on 17th October 2020

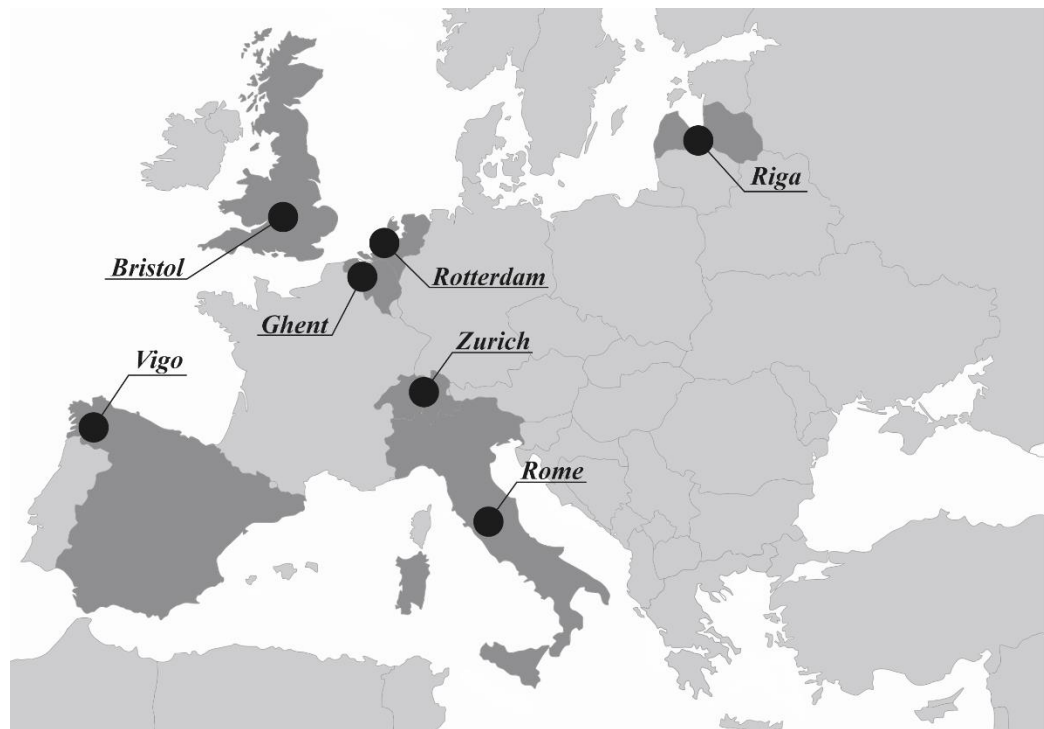


Figure 49 - City-Regions involved in the SUPURBFOOD project. Source: own elaboration

Taking into consideration the metropolitan area of the city of Rome, it can be seen that it is strongly characterized by densely populated suburbs alternating with green areas. However, this area is under continuous and constant pressure from the construction industry that want to build new suburbs to cope with the continuous demographic increase. For this reason, it should be noted that, in several cases, the many agricultural activities in the area also play a role as "*strongholds*" for the protection of green spaces. By the way, in parallel to professional farming activities, two further types of urban agriculture are deployed, and are identified respectively in the "*small scale semi-subsistence farming*" (which is performed by single households) and the "*neighborhood-based initiatives of collective gardening*". These two agricultural activities have as main objective to promote agriculture for social and recreational purposes⁶². Hence it can be seen that within the municipal boundaries, there are several interesting agricultural activities that involve the experimentation of new innovative practices able to find or create new ways for managing farm-based activities located close to the urban centre. In this context, the cooperative "*Agricoltura Nuova*" is one of the most relevant on the territory because it promotes initiatives of professional agriculture and it is one of the most interesting for the wide range of aspects that its activities cover. However, the start of the project occurred through the identification of two work packages that immediately cleared up in parallel. These two packages both aimed at the same objectives: on the one hand, they tried to describe and analyze the agro-food dynamics, policies and governance agreements in different European city regions, while on the other hand they aimed to enrich the basic knowledge useful for the design of case studies in European city-regions by documenting and analyzing the experiences acquired in the Global South through *i*) short food chain delivery; *ii*) water, nutrient and waste management and recycling; *iii*) multifunctional agriculture in urban and peri-urban areas (Supurbfood, 2013). The second phase of the project, instead, sees small-medium enterprises engaged, together with

⁶² Source: <http://supurbfood.eu/city-regions/metropolitan-area-rome-italy/> - visited on 17th October 2020

researchers, in the development, implementation and evaluation of new techniques, strategies, agreements and/or practices aimed at improving: *i*) the closure of nutrient, water and waste cycles in urban and peri-urban areas; *ii*) short chain delivery of food in urban and peri-urban areas and *iii*) the multifunctional use of land in urban and peri-urban areas (Supurbfood, 2013).

2.2.4. Food Meters

Offering a series of decision support tools for urban-metropolitan agriculture stakeholders, the European research project "*Food Planning and Innovation for Sustainable Metropolitan Regions*" (FOODMETERS) launched in 2012 and concluded on 2015, aims to assess the environmental and socio-economic impacts of food chains by referring to the spatial, logistical and resource dimensions of food growth, food planning and governance⁶³. Moreover, this European project uses the characteristics of the food chain, understood as environmental performance indicators, in order to evaluate what is the "*land footprint*" of urban food consumption, in terms of socio-economic and environmental impacts⁶⁴.

Therefore, the main objective of the project was to identify opportunities to increase and diversify agriculture and food supply and to shorten food chains in metropolitan regions, including their urban, peri-urban and rural areas. The research carried out in this project covers questions of food production, processing and logistics and focusses on sustainable and resource-efficient solution that are socially and ecologically embedded⁶⁵. Moreover, the central pillar of the approach used by this project is the development of a series of complementary tools that are identified in: *i*) the storylines that link food chain spatial and functional characteristics with different innovation domains and performance indicators; *ii*) a typology of short food supply chains that serves as a reference for running qualitative Sustainability Impact Assessment (SIA) along socio-economic and environmental criteria; *iii*) a set of three metropolitan footprint tools designed to frame, communicate and manage the impacts of urban food consumption on metropolitan regions⁶⁶; *iv*) the Rural Development Policy Assessment regarding the different short food supply chains at the level of stakeholders and expert panels; *v*) the Food Safety and Quality Assessment on the basis of indicators and thresholds as part of food-chain-specific questionnaires; *vi*) the Knowledge Brokerage (KB) tools for both stakeholder interaction in support of food chain innovation during regional workshops as well as by means of an internet-based KB-Platform.

⁶³ Source: <http://www.foodmetres.eu/> - visited on 19th October 2020

⁶⁴ *Ibid.*

⁶⁵ Source: <https://cordis.europa.eu/project/id/312185/reporting> - visited on 19th October 2020

⁶⁶ These tools are *i*) the Metropolitan Economic Balance Assessment (MEBA) which is a measure of framing aspects of food security and supply at the statistical meta level of urban metropolises; *ii*) the Regional Metropolitan Area Profiles and Scenario (MAPS) demand tool producing scenarios at the level of administrative units; *iii*) European 'Metropolitan Foodscape Planner (MFP) supply tool, an interactive, spatially dynamic approach at the land use level based on GIS-technology.

Source: <https://cordis.europa.eu/project/id/312185/reporting> - visited on 19th October 2020

The launch of the FOODMETRES project coincided with growing societal concerns about how food chains affect life on our planet. Advances in production, logistics, processing and retailing mean that more and more people have access to consistent, safe and affordable quality food. However, serious concerns remain regarding, for example, the environmental impacts of food chains, the marginalisation of smallholder farmers, inequalities in access to healthy and affordable food and the long-term resilience of food chains to depletion of natural resources, climate change and global population growth⁶⁷. Food chains, however, are receiving increasing attention from society, especially from industrialized countries, as they concern issues of sustainable production. Within this project, considerations such as ecological footprint, food origin, value chain transparency, underlying agricultural business models as well as the role of metropolitan region⁶⁸ are closely interlinked. For these reasons the difference between these different factors can be interpreted through the so-called "*Food Triangle*" in which food chains play a key role between food security and accessibility on the one hand and food quality and ethics on the other⁶⁹.

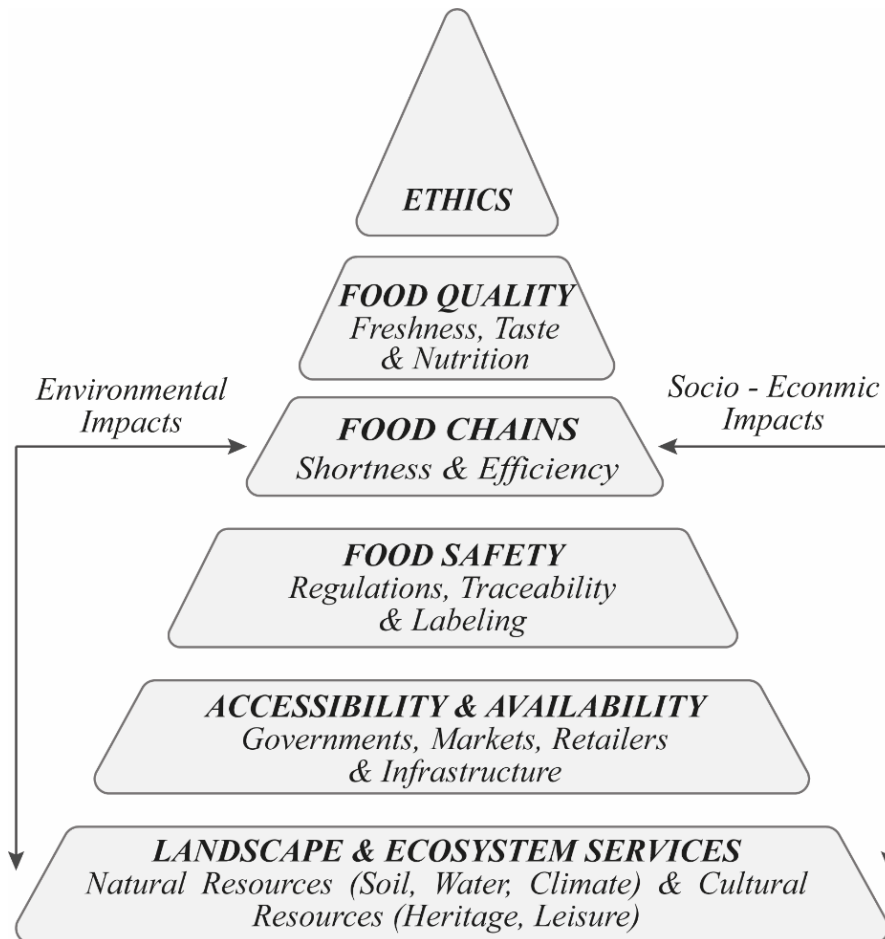


Figure 50 - The Food Meters conceptual design in relation to the Food Triangle.
Source: own elaboration from: <http://www.foodmetres.eu/>

⁶⁷ Source: <https://cordis.europa.eu/project/id/312185/reporting> - visited on 19th October 2020

⁶⁸ FOODMETRES defines metropolitan regions in the context of the land use impacts of cities on their surrounding areas. It hence considers phenomena such as urban food consumption patterns, recreational behaviour and preferences, infrastructure and urbanisation processes as drivers that shape and define the surrounding metropolitan regions. Metropolitan regions are therefore dynamic in terms of size and character, and are not defined by sharp boundaries but soft transition zones.

Source: <https://cordis.europa.eu/project/id/312185/reporting> - visited on 19th October 2020

⁶⁹ Source: <http://www.foodmetres.eu/> - visited on 19th October 2020

In this regard, it is right to point out that cities are becoming increasingly important "drivers" of change in food chains. In particular, by exerting demand from shorter food chains, local food and community food production, cities are increasing the amount of food grown within their boundaries and in associated metropolitan areas. To address these issues, the FOODMETERS project has focused on metropolitan food governance and innovation as reflected in the project's full title.

Studying, comparing and discussing different social-economic and environmental impacts of innovative food chain systems in selected case studies has been at the heart of the FOODMETRES approach. For this reason, five European cities (Rotterdam, Berlin, Ljubljana, London, Milan) and one African city (Nairobi) have been considered within this project. The choice of these case studies allowed to analyze the different dimensions of global trade not only according to the terms of resource management, logistics and food security⁷⁰.

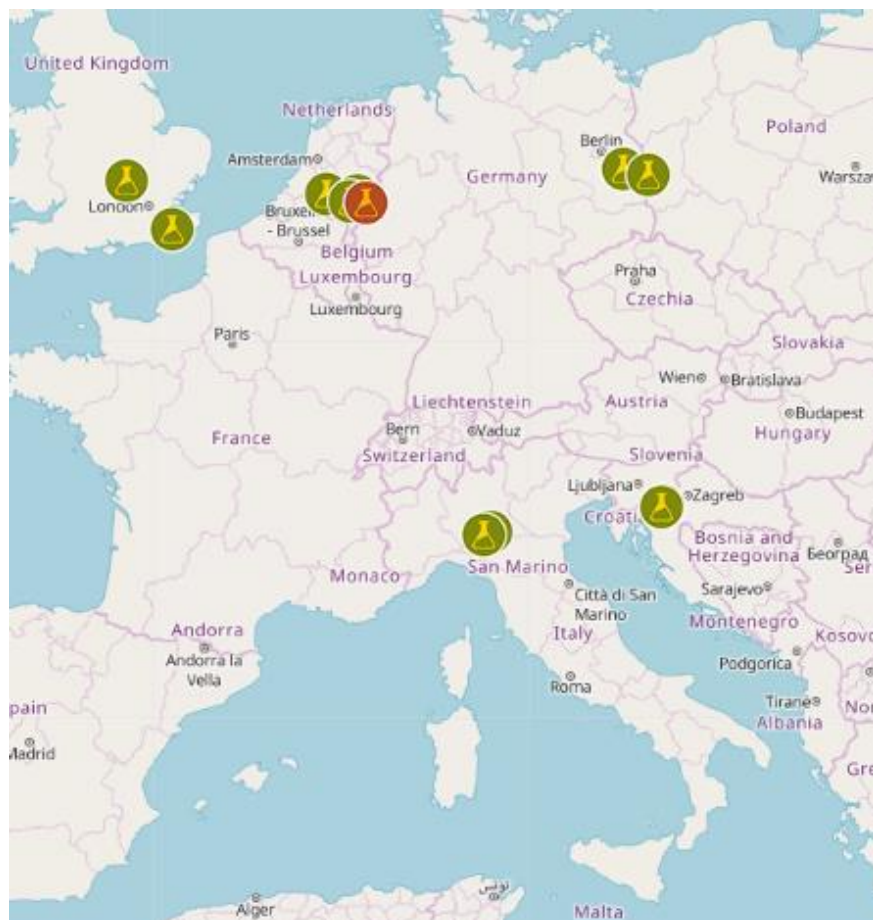


Figure 51 – Partners involved in the Food Meters project. Source: <https://cordis.europa.eu/project/id/312185/it>

- 1) **Rotterdam (Netherlands):** Rotterdam plays an important role in the export and import of food. However, the city is also characterized by the presence of numerous examples of local food production, new relationships between producers and consumers and the development of urban agriculture that provides multiple services to the city. In this case study, the application of the FOODMETERS project does not only consider the city of Rotterdam but focuses on areas outside the municipal boundaries in order to include functional relationship with for instance Midden Delfland (peri-urban meadow

⁷⁰ Source: <http://www.foodmetres.eu/case-studies/> - visited on 19th October 2020

area that is part of The Hague Region) and Westland (also part of The Hague Region)⁷¹. The decision to apply the FOODMETERS project to the urban region of Rotterdam, has as main goal to find innovative solutions to make the food chain shorter but also to reduce the ecological footprint of urban consumption while strengthening relations between city and countryside⁷².

- 2) **Berlin (Germany)**: The metropolitan region of the city of Berlin is made up of two federal states: Brandenburg and Berlin. Berlin-Brandenburg, thus, is a metropolitan region in which, in the immediate vicinity of the metropolitan centre, there are rural areas for agricultural activity. The green and creative image of the regions is visible in a large number of innovative initiatives for urban agriculture and regional food. It is estimated that the city of Berlin is one of the largest organic food markets in Europe, with national and global suppliers, while the surrounding region of Brandenburg has the highest share of organic farmland in the country. The application of the FOODMETERS project, in this case, will focus on the Analysis of the Metropolitan Agrofood System; the Identification of good practice for short food chains and food chain innovations; the Food chain analysis and the Analysis of food planning and food policy⁷³.
- 3) **Ljubljana (Slovenia)**: Although Slovenia and Ljubljana, intended as its metropolitan area, need to face low self-supply of locally produced food, this can in fact be a huge boost in the search for possible short food supply chains. The project aims to connect theoretical foundations with practical experiences of local stakeholders, which may act as inhabitants, food producers, wholesalers and retailers of food, non-governmental organizations and local and state authorities. In this way, with their different experiences they contribute constructively to the issue of short food supply chains⁷⁴.
- 4) **London (United Kingdom)**: London is a world city with more than 8 million inhabitants in the urban and 14 million in the metropolitan area. London has a long running and very vibrant scene of growing and gardening activities, making it an attractive case study for FOODMETRES. This latter, focused on the impact of food chains and chain innovation on the environment, society and the economy⁷⁵.
- 5) **Milan (Italy)**: The metropolitan area of Milan is one of the most populated area in Europe and expresses a high demand for food which is currently satisfied mainly by global food supply chains. Its geographical location determines its leading role both in food production and trading within Italy and Europe, and the primary sector plays here an important economic, social and environmental role. In this context, the development of food supply chains which bring near producers and consumers may contribute to

⁷¹ Source: <http://www.foodmetres.eu/case-studies/rotterdam-metropolitan-region/> - visited on 19th October 2020

⁷² Source: http://www.foodmetres.eu/wp-content/uploads/2013/05/FOODMETRES_Flyer_Rotterdam_EN.pdf - visited on 19th October 2020

⁷³ Source: http://www.foodmetres.eu/wp-content/uploads/2013/07/FOODMETRES-Flyer-Berlin_EN_new.pdf - visited on 19th October 2020

⁷⁴ Source: http://www.foodmetres.eu/wp-content/uploads/2013/05/FOODMETRES_Flyer_Ljubljana_EN.pdf - visited on 19th October 2020

⁷⁵ Source: http://www.foodmetres.eu/wp-content/uploads/2013/07/FOODMETRES_Flyer_London.pdf - visited on 19th October 2020

achieve different results towards sustainability. FOODMETRES aims to study the interactions among the actors in the supply chain, flows of food and the role of innovation in terms of logistics, management and governance, to get to a quantitative and qualitative increase of local products demanded and consumed in the metropolis⁷⁶.

- 6) **Nairobi (Africa)**: Besides being a capital city, Nairobi serves as one of Kenya's eight provinces. It covers an area of about 700 km², and contains many open spaces in which agriculture is being undertaken, formally or informally. The growth of urban agriculture since the late 1970s is largely understood as a response to escalating poverty and rising food prices or shortages. In the mid-1980s, 20% of the Nairobi households were growing crops within the city limits. Moreover, 7% appeared to keep livestock within the city. Although urban farming was carried out by households across all socio-economic strata, poorer households tended to be more engaged with urban agriculture. However, four farming systems can be distinguished in Nairobi: i) *Small-scale subsistence crop cultivation*; ii) *Small-scale livestock production*; iii) *Small-scale market-oriented crop cultivation*; iv) *Large-scale commercial farming*. However, in the city of Nairobi, the application of the FOODMETERS project may seem as absurd as it is singular because, compared to the other European case studies, it offers a more extreme view on issues related to food, urban agriculture and the relationships that bind together urban and rural areas⁷⁷.

The FOODMETRES project has developed a set of decision support tools that enable stakeholders from urban and peri-urban agriculture, food business, governance and civil society to enter into a knowledge-driven debate on how to optimize regional food supply in metropolitan areas around cities through sustainable and innovative food chain planning and governance. One of the new contributions of the project is to enable the visualization of metropolitan supply and demand scenarios through interactive mapping tools, which help stakeholders better understand the possibilities of increasing metropolitan food sufficiency. At the core of these efforts has been the focus on different types of innovation in the food chain, such as products, processes, governance and various social forms of innovation. Rather than suggesting a single form of sustainable food chain innovation, FOODMETRES has applied its evidence-based assessment tools to a wide range of food chains ranging from community supported agriculture in London, Ljubljana or Berlin and subsistence farming methods in Nairobi, to large-scale glasshouse glass production in large scale as in Rotterdam-Westland⁷⁸.

⁷⁶ Source: http://www.foodmetres.eu/wp-content/uploads/2013/07/FOODMETRES_Flyer_Milan_EN.pdf - visited on 19th October 2020

⁷⁷ Source: <http://www.foodmetres.eu/case-studies/nairobi-case-study/> - visited on 19th October 2020

⁷⁸ Source: <https://cordis.europa.eu/project/id/312185/reporting> - visited on 19th October 2020

2.2.5. Capsella

One of the major challenges related to the achievement of sustainability that current European and global societies have to face is the overcoming of food production and conventional and industrialized agricultural systems that are increasingly characterized by a high use of external inputs. This also shows how the main conventional food production systems are becoming a serious threat to the environment and biodiversity. These negative aspects are mainly due to their un-sustainability, high levels of food waste and the consequent reduction in farmers' incomes. Therefore, as previously mentioned within this document, it is necessary to promote alternative food systems in which there is a reduced use of external inputs which leads to: *i)* an optimized use of agricultural biodiversity (Agrobiodiversity), ecological processes and natural resources; *ii)* more efficient food systems based respectively on higher food quality but above all characterized by a short supply chain in which end consumers play an active role in driving the demand and supply of products⁷⁹.

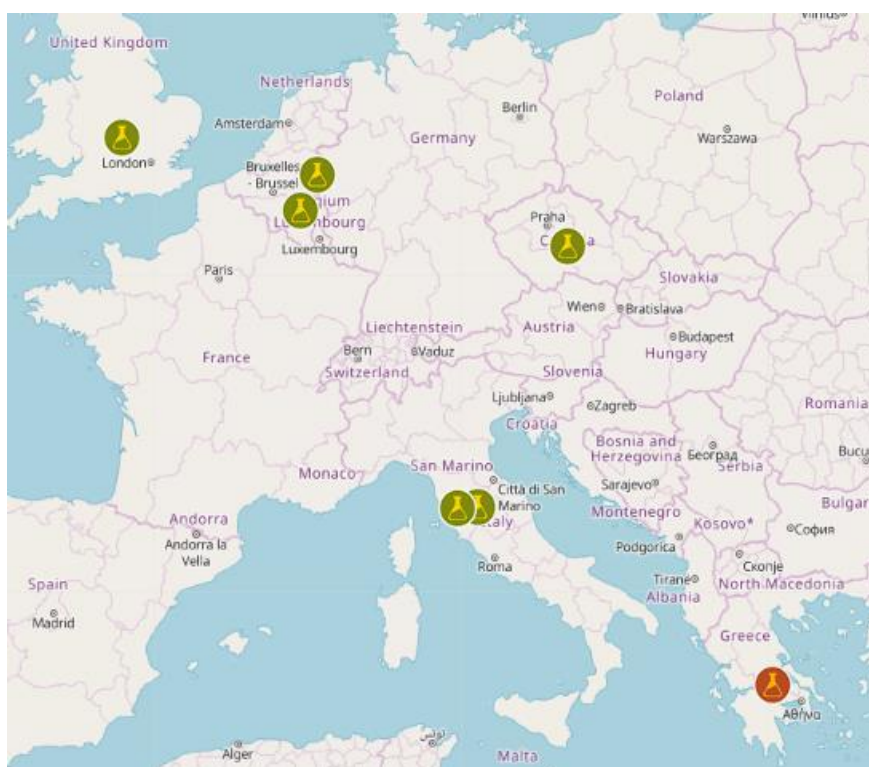


Figure 52 – Partners involved in the Capsella project. Source: <https://cordis.europa.eu/project/id/688813>

Within this context, the European Commission in January 2016 decided to launch the project "*Collective Awareness PlatformS for Environmentally-sound Land management based on data technoLogies and Agrobiodiversity*" (CAPSELLA). This project, which ended in June 2016, since its early stages has sought to address and deepen the roots of sustainability within agri-food systems, exploiting local and scientific knowledge, energy, motivation and innovation capacity of people on the issue of agrobiodiversity using innovative, improved and demand-driven ICT solutions⁸⁰. The

⁷⁹ Source: <https://cordis.europa.eu/project/id/688813> - visited on 20th October 2020

⁸⁰ The LFHE define Information Communications and Technology (ITC) as 'the term now widely used to cover all the computing and telecommunications in an institution, whether used for research, teaching and

CAPSELLA project, however, will use a bottom-up participatory approach⁸¹ where data will be integrated from the bottom-up in order to develop efficient solutions that can meet the needs of communities⁸². Furthermore, these solutions, based and guided by communities, will be tested by the communities employed in the project⁸³, thus giving rise to a series of pilot projects. Moreover, at the centre of the CAPSELLA work will be three multidisciplinary, community-driven use cases, such as i) “*field scenario*” addressing use of functional agro-biodiversity in cropping system; ii) “*food scenario*” addressing the transparency of the food chain in the processes related to the production, distribution and consumption of food; iii) “*seed scenario*” addressing on-farm genetic diversity conservation and informal seed system⁸⁴.

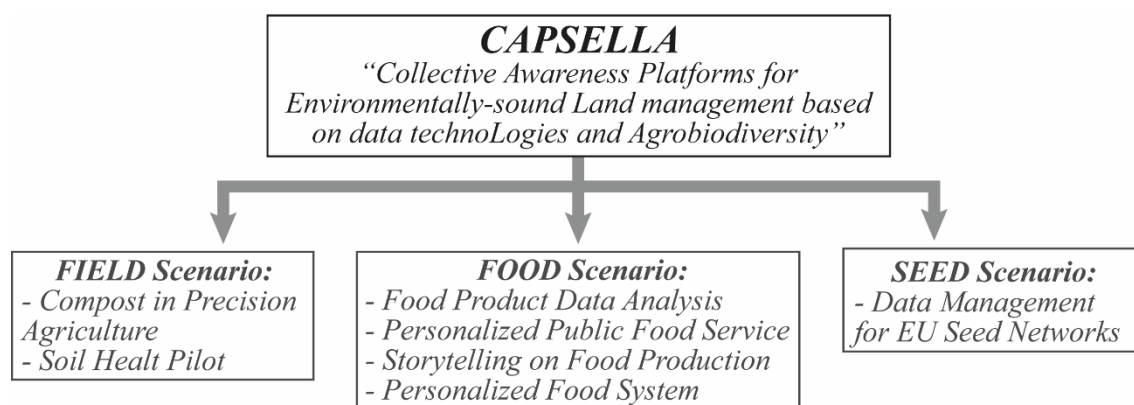


Figure 53 - Multidisciplinary community-driven use cases within the Capsella project. Source: own elaboration from: <http://www.capsella.eu/>

The ambitious goal of the CAPSELLA project, is to address and provide open data ICT solutions to sort out some key societal hot issues such as the proper use and management of agricultural land and agro-biodiversity, hence to ensure the understanding of the importance of good quality food as the last segment of the agro biodiversity process.

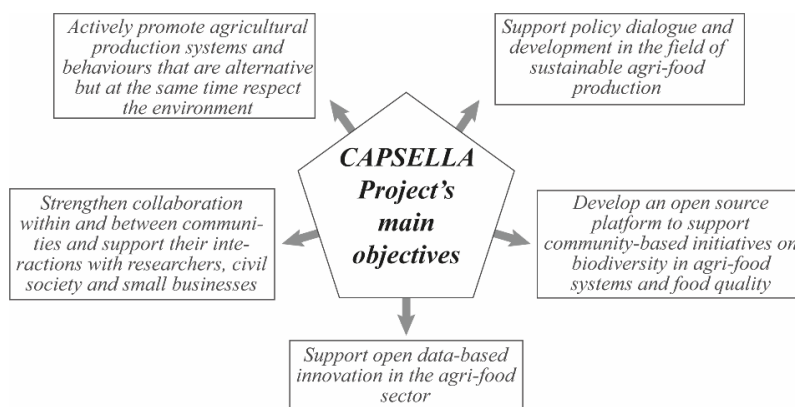


Figure 54 - main goals of the Capsella project. Source: own elaboration from: <http://www.capsella.eu/objectives/>

learning or administration'. It embraces all the technology and applications together with information, processes and people used to communicate, and to create, disseminate, store, and manage information. Source: <https://www.nottingham.ac.uk/gradschool/sict/toolkit/glossary/> – visited on 20th October 2020

⁸¹ Source: <http://www.capsella.eu/> - visited on 20th October 2020

⁸² Source: <http://www.capsella.eu/objectives/> - visited on 20th October 2020

⁸³ Seven communities are employed in this project and they are located in Greece, Italy, United Kingdom, Belgium, Czech Republic and the Netherlands. Source: <https://cordis.europa.eu/project/id/688813> - visited on 20th October 2020

⁸⁴ Source: <http://www.capsella.eu/objectives/> - visited on 20th October 2020

2.2.6. FoodE

The project "*FoodE - Development of sustainable City-Region Food System*", launched in February 2020 and in force until 2024, thanks to funding from the European Union (EU) aims to accelerate the growth of City-Region Food System (CRFS) by linking several local initiatives across Europe through a joint development and dissemination of new tools to promote and strengthen what are the food systems led by citizens⁸⁵.

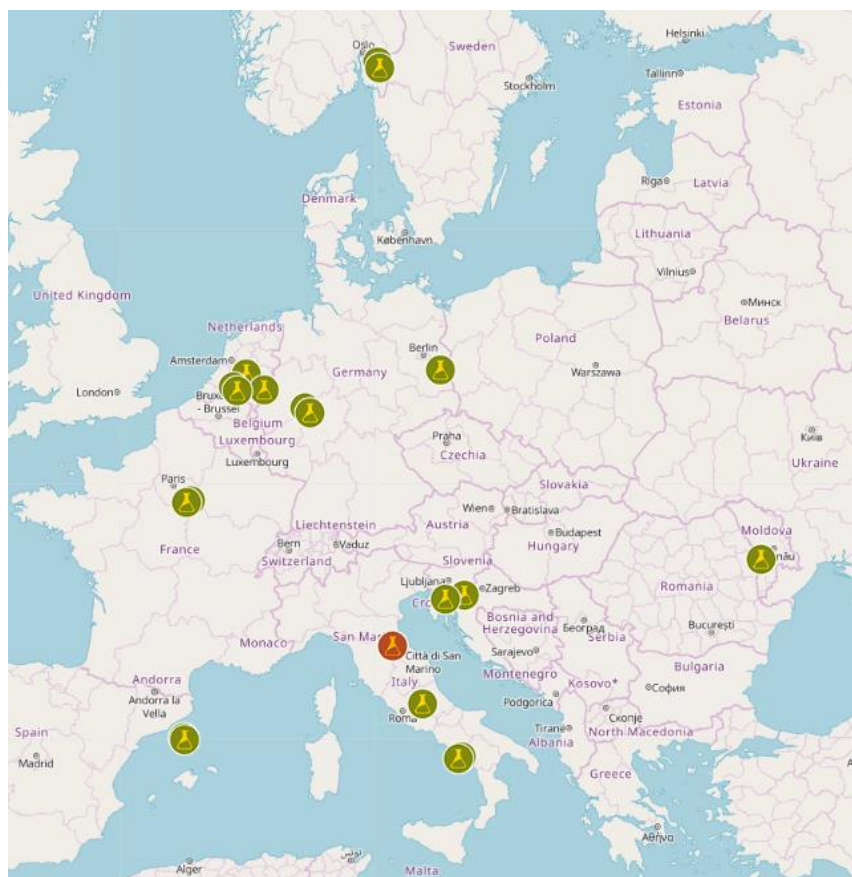


Figure 55 – Partners involved in the FoodE project. Source: <https://cordis.europa.eu/project/id/862663/it>

This project, coordinated by the University of Bologna, brings together a highly qualified consortium of twenty-four organizations. The latter can be identified in universities, research institutes, small-medium enterprises (SMEs), NGOs and city councils operating in eight European Union countries⁸⁶ (Italy, France, Spain, the Netherlands, Germany, Norway, Romania and Slovenia). However, since the countries in question are different from each other, it is worth highlighting how this diversity can create barriers to the demonstration of innovative and systemic food-related approaches⁸⁷.

The objective of the FoodE project, as previously mentioned, is therefore to accelerate the growth of CRFSs through the combination of multiple local initiatives, on the one hand, and the co-development and subsequent dissemination of a series of tools designed to ensure the application of the most up-to-date cross-sectoral knowledge on the other. Within this scenario, food system start-ups will play a key role as they will provide a deeper understanding of the needs expressed by the main stakeholders, thus making

⁸⁵ Source: <https://cordis.europa.eu/project/id/862663/it> - visited on 21st October 2020

⁸⁶ Source: <https://www.foode.eu/en/about-foode/what-does-foode-do/> - visited on 21st October 2020

⁸⁷ Source: <https://cordis.europa.eu/project/id/862663/it> - visited on 21st October 2020

possible the implementation and transformation towards a resilient and citizen-driven food system⁸⁸. It is therefore clear that the main challenge to be faced is to aggregate together the most sustainable models of CRFS and allow the co-creation of innovative pilot experiences, promoting the health and well-being of European citizens. This challenge will be addressed by setting up a mechanism based on the principles of Citizen Science and Responsible Research and Innovation, in which public authorities, citizens, business actors and non-profit organizations share ideas, tools, best practices, and new models supporting cities during the process that will lead them to become innovative food hubs⁸⁹. Finally, the results that will be obtained from this project will have an impact on the creation of new jobs, on the promotion of local economy, on the strengthening of the role of local communities in compliance with the Sustainable Development Goals and on the identification and strengthening of the multiple relationships that exist between the different actors involved in the food chain.

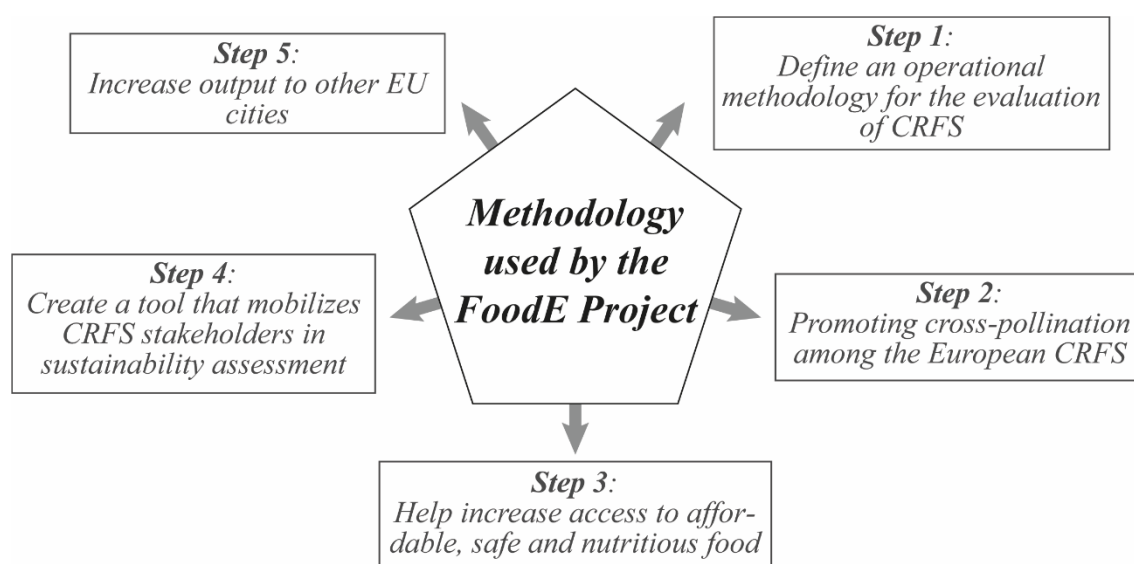


Figure 56 - Method by which FoodE project intends to achieve its goals. Source: own elaboration from: <https://cordis.europa.eu/project/id/862663/it>

⁸⁸ Source: <https://cordis.europa.eu/project/id/862663/it> - visited on 21st October 2020

⁸⁹ Source: <https://www.unibo.it/en/research/projects-and-initiatives/research-projects-horizon-2020/3/29/2557> - visited on 21st October 2020

2.2.7. ProIGreg

The project "*proGlgreg - Productive Green Infrastructure for post-industrial urban regeneration*", included in the Horizon 2020 programme, was launched by the European Commission in June 2018 and will remain active until May 2023. Respectively, the term "*proIGreg*" stands for "*a productive green infrastructure for post-industrial urban regeneration*", which is why scientists, researchers and educators are working together with citizens in different cities to try to find and improve solutions for urban regeneration. As is well known, the urbanization process over the years has caused a continuous and increasing loss of green areas within cities. Therefore, without a shadow of a doubt, this expansion of urban areas has heavily affected water, air, soil, biodiversity, human health and even climate. In this regard, the desire to initiate a process of transformation towards a more sustainable future implies the need for sustainable cities in which green and nature-based solutions play a key role in everyday urban life⁹⁰.

The Productive Green Infrastructure for post-industrial urban regeneration project was born with the aim of creating the so called "*Living Labs*", which can be considered as specific areas where "*Nature-Based Solutions*" (NBSs) will be tested and developed within a real-life environment, in urban areas facing the challenge of post-industrial regeneration⁹¹. The European Commission defines nature-based solutions as "*solutions inspired and supported by nature, which are cost-effective while providing environmental, social, and economic benefits, thus helping to build resilience*"⁹². Going beyond the current state-of-the-art with Green Infrastructure as a one-off state intervention, the proGlgreg Living Labs will develop NBS which are citizen owned and co-developed by state, market and civil society stakeholders. Moreover, these solutions will be subject to innovative technical, social and economic processes. Respectively, innovation will take place on the technical level through the NBSs deployments, on the social level through co-designing, co-creating and co-implementing NBS with local communities and, finally, on the economic level through combining NBS with market-ready business models⁹³.

Eight different cities from all over the world participate in this project: Dortmund (Germany), Turin (Italy), Zagreb (Croatia), Ningbo (China), Cascais (Portugal), Cluj-Napoca (Romania), Pireaus (Greece) and Zenica (Bosnia and Herzegovina). Respectively, the first four cities are leaders in urban regeneration experimentation due to the fact that they have adopted nature-based solutions after carefully developing, testing and implementing them. The other four cities, on the other hand, are committed to replicating the approved solutions and are also tasked with closely monitoring progress in the Living Labs of the various partner countries, which are proving to be thirty-three⁹⁴.

⁹⁰ Source: <https://www.torinocitylab.com/en/progireg#> - visited on 21st October 2020

⁹¹ Source: <https://www.uniba.it/ricerca/dipartimenti/disaat/avvisi-e-notizie/notizie-scadute/2019/progetto-productive-green-infrastructure-for-post-industrial-urban-regeneration-progireg> - visited on 21st October 2020

⁹² Source: <https://www.torinocitylab.com/en/progireg#> - visited on 21st October 2020

⁹³ Source: <https://cordis.europa.eu/project/id/776528/it> - visited on 21st October 2020

⁹⁴ Source: <https://www.torinocitylab.com/en/progireg#> - visited on 21st October 2020

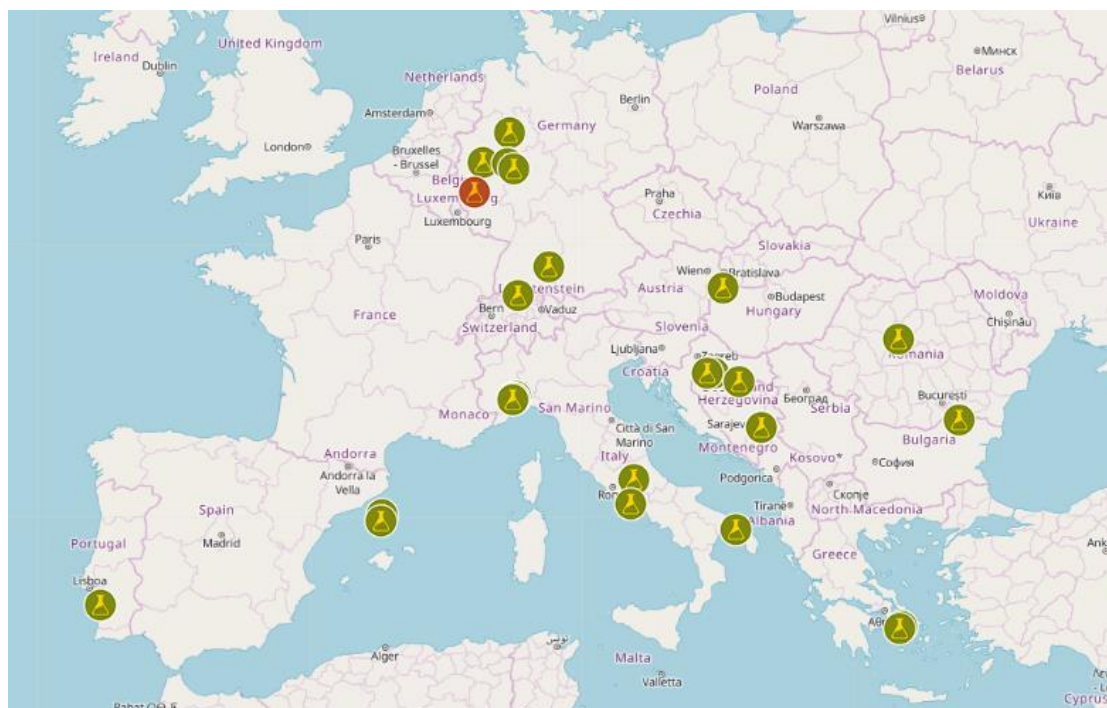


Figure 57 – Partners involved in the proIGreg project. Source: <https://cordis.europa.eu/project/id/776528/it>

By analyzing the proIGreg project more closely, it is possible to see how eight different NBSs have been included in it in order to create green infrastructure not only to improve the quality of life and reduce the vulnerability of cities to climate change, but also to provide tangible and measurable economic benefits for citizens and businesses in post-industrial urban districts⁹⁵.

- **NBS 1 - Leisure activities and clean energy on former landfills:** I siti di discarica sono comuni nelle aree postindustriali, così come lo sono le sfide per metterli in sicurezza e sfruttare lo spazio quando non più in uso.⁹⁶
- **NBS 2 - New re-generated soil:** After decades of neglect, the soil in post-industrial areas is often of poor quality, unfit for any use. Importing fertile soil from elsewhere is costly, both environmentally as well as economically. Carbon-neutral methods to restore soil fertility involve combining the poor quality soil with compost from organic waste and biotic compounds.⁹⁷
- **NBS 3 - Community-based urban farms and gardens:** Post-industrial areas often lack green spaces for public use. Turning unused urban land into productive community gardens can have a positive impact on locals, contributing to improved mental and physical health through exposure to nature and healthy sources of food and a community feeling.⁹⁸
- **NBS 4 - Aquaponics:** Aquaponics is the combination of raising fish (aquaculture) in tanks together with soilless cultivation of plants (hydroponics) in a symbiotic environment, whereby the fish waste water provides the nutrients needed to feed the

⁹⁵ Source: <https://www.torinocitylab.com/en/progireg#> - visited on 21st October 2020

⁹⁶ Source: <https://progireg.eu/nature-based-solutions/leisure-activities-and-clean-energy-on-former-landfills/> - visited on 21st October 2020

⁹⁷ Source: <https://progireg.eu/nature-based-solutions/new-regenerated-soil/> - visited on 21st October 2020

⁹⁸ Source: <https://progireg.eu/nature-based-solutions/community-based-urban-farms-and-gardens/> - visited on 21st October 2020

plants. Aquaponics is ideal for promoting local food production in areas with contaminated or poor quality soil.⁹⁹

- **NBS 5 - Green walls and roofs:** Green roofs and vertical gardens improve a building's insulation, reduce storm water run-off, capture CO₂, filter pollutants, and increase biodiversity. This all leads to reduced energy consumption and increased urban resilience. Available technology is advanced but the challenge is to increase uptake by integrating it into local urban policies.¹⁰⁰
- **NBS 6 - Accessible green corridors:** Needed for transporting goods, rivers were a common feature of early industrialization. Nowadays in post-industrial cities, they are often left derelict and inaccessible for locals. While other existing projects are involved in renaturing the rivers and green corridors of the Living Labs, the focus of proGReg is to improve the accessibility to these green corridors so that the cities become more livable and locals can connect more to nature.¹⁰¹
- **NBS 7 - Local environmental compensation processes:** As shown within these nature-based solutions, measures to compensate the environment are available. However embedding them into mainstream policies and urban planning procedures requires more effort, in the shape of establishing the evidence-base for NBS and unlocking funds for example via adaptation funds, taxes or public-private partnerships.¹⁰²
- **NBS 8 - Pollinator biodiversity:** This nature-based solution complements and links all other greening actions of proGReg since pollinators are essential to a healthy and functioning ecosystem. To make urban areas more pollinator-friendly, cities can reduce pesticide usage and increase the size of green spaces and plant species diversity.¹⁰³

Tabel 11 - Types of NBSs adopted by each city participating in the ProGReg. Source: own elaboration from: <https://progireg.eu/the-project/>

Natural-Based Solutions (NBSs) included in the ProGReg project								
	Dortmund	Ningbo	Turin	Zagreb	Cascais	Cluj-Napoca	Pireaus	Zenica
NBS 1	X							X
NBS 2			X					
NBS 3	X		X	X	X	X		
NBS 4	X		X	X				
NBS 5			X	X		X		X
NBS 6	X	X	X	X	X	X	X	X
NBS 7		X	X	X				
NBS 8	X		X		X			

⁹⁹ Source: <https://progireg.eu/nature-based-solutions/aquaponics/> - visited on 21st October 2020

¹⁰⁰ Source: <https://progireg.eu/nature-based-solutions/green-walls-and-roofs/> - visited on 21st October 2020

¹⁰¹ Source: <https://progireg.eu/nature-based-solutions/accessible-green-corridors/> - visited on 21st October 2020

¹⁰² Source: <https://progireg.eu/nature-based-solutions/local-environmental-compensation-processes/> - visited on 21st October 2020

¹⁰³ Sour

ce: <https://progireg.eu/nature-based-solutions/pollinator-biodiversity/> - visited on 21st October 2020

2.2.8. Skin

The project "*Short supply chain Knowledge and Innovation Network*" (SKIN), also part of the Horizon 2020 programme, was launched by the European Commission in November 2016 and, after three years of activity, ended in October 2019¹⁰⁴. However, from the very beginning, this project has been considered as an ambitious initiative in the field of short-term food supply chains (SFSC), promoted by twenty-two partners located in fifteen European countries¹⁰⁵. This initiative aimed at synthesizing existing knowledge, fostering demand-based innovation, building long-term collaboration between farmers and European cooperatives and aimed at facilitating stakeholders engagement and promoted innovation through demand-driven research in the short food supply chain domain¹⁰⁶.

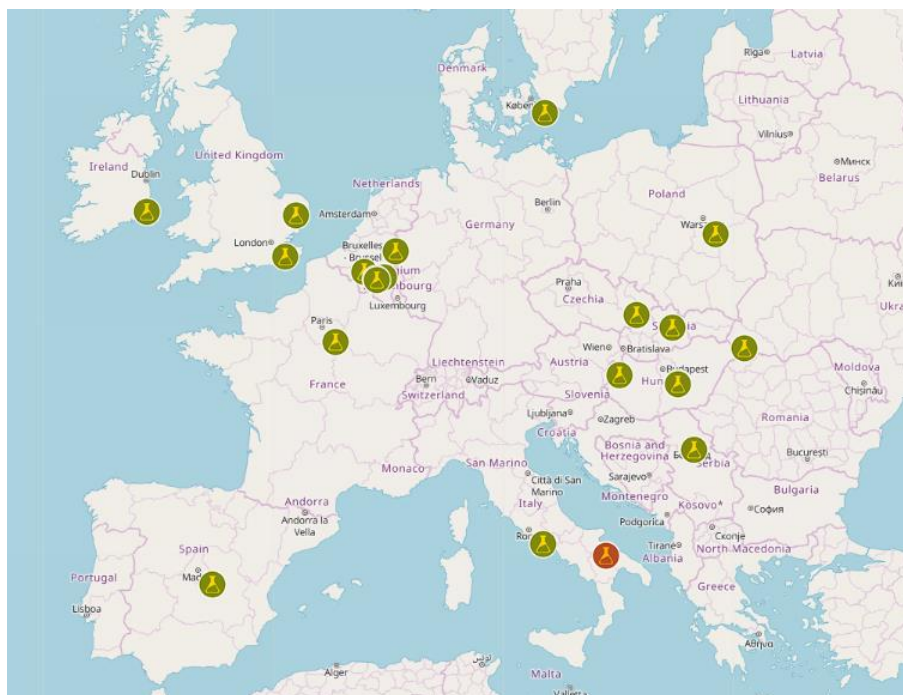


Figure 58 – Partners involved in the SKIN project. Source: <https://cordis.europa.eu/project/id/728055/it>

Furthermore, SKIN sought to provide a range of input for policy making through links to the EIP-AGRI¹⁰⁷. During its three years of activity, the project has formed and animated a community of about 500 stakeholders with the intention of establishing a European association capable of working steadily to improve the efficiency of SFSCs in order to enhance the growth of the sector itself¹⁰⁸. If on the one hand the future of the economy lies in the relationship between society and the environment, on the other hand it is clear that the element that plays the role of intermediary between these two entities

¹⁰⁴ Source: <https://cordis.europa.eu/project/id/728055/it> - visited on 22nd October 2020

¹⁰⁵ The European countries that have participated in the SKIN project appear to be: Italy, Belgium, Serbia, Czech Republic, Ireland, Hungary, United Kingdom, France, Netherlands, Poland, Spain, Austria, Slovakia, Denmark, Ukraine. Source: <http://www.shortfoodchain.eu/the-project/partner/> - visited on 22nd October 2020

¹⁰⁶ Source: <http://www.shortfoodchain.eu/the-project/the-project.kl> - visited on 22nd October 2020

¹⁰⁷ The EIP-AGRI was launched by the European Commission in 2012 and it aims to foster a competitive and sustainable agriculture and forestry sector that "*achieves more from less*".

Source: <https://ec.europa.eu/eip/agriculture/node/50> - visited on 22nd October 2020

¹⁰⁸ Source: <https://www.ugent.be/en/research/research-ugent/trackrecord/trackrecord-h2020/collaborative-h2020/soc-challenges/sc2-food-skin.htm> - visited on 22nd October 2020

is food, or rather, a place of trust in which producers and society must meet. For these reasons, short food supply chains are characterized by a maximum of an intermediary but, despite this, the SFSC can take very different forms: *i)* direct sales through farmers' stores; *ii)* farmers' markets; *iii)* public procurement; *iv)* third party production for processors, retailers, restaurants, and catering service providers¹⁰⁹.

Generally speaking, the SFSC aim is to reduce the distance between producers and the rest of society, linking them by means of relationships in which mutual trust between the two parties is an essential element. From the citizens' point of view, short food chains allow to transfer more information about the origin and quality of food while, as far as the producers' sphere is concerned, SFSC preserve a greater share of added value¹¹⁰. The stakeholder community described above, has been built and animated around the identification of "*best practices*" in short supply chains across Europe. These practices have been systematized and elaborated in usable formats and then made available to stakeholders through web formats and regional nodes in order to allow a deeper penetration of existing knowledge into practice. The work that has been carried out on the set of these best practices has allowed to identify the key issues, obstacles and opportunities surrounding the short food supply chains¹¹¹. These issues, once identified, were considered as the main themes of six "*innovation challenges workshops*" whose aim was to stimulate stakeholders to come up with new ideas for innovation research or innovation dissemination¹¹².

The establishment and involvement of communities, through the organization of these workshops, was the preliminary aspect that the SKIN project wanted to address to raise awareness on issues related to good practices, exchange of experiences, innovative ideas and projects and overall the possibility of spreading across EU regions and territories efficient management of short supply chains, benefitting both the economy and the environmental sustainability of regions and society concerned. However, the SKIN project has not only focused on the creation of a network of practices but also on defining and generating concrete actions regarding SFSC innovation through the improvement of the two-way flow of information between research and practice, and its exploitation for the co-creation of new innovative and successful solutions¹¹³.

¹⁰⁹ Source: <http://www.shortfoodchain.eu/the-project/short-food-chain.kl> - visited on 22nd October 2020

¹¹⁰ *Ibid.*,

¹¹¹ Source: <https://cordis.europa.eu/project/id/728055/it> - visited on 22nd October 2020

¹¹² Source: <https://www.ugent.be/en/research/research-ugent/trackrecord/trackrecord-h2020/collaborative-h2020/soc-challenges/sc2-food-skin.htm> - visited on 22nd October 2020

¹¹³ Source: <http://www.shortfoodchain.eu/the-project/network.kl> - visited on 22nd October 2020

2.2.9. CityFood

The collaborative project "CityFood", included in the Horizon 2020 program and launched in May 2018¹¹⁴, aims to address a number of scientific, environmental and social issues related to supply chain optimization, resource efficiency, food safety and regulatory acceptance of integrated water-farming, understood as a sustainable form of food production aimed at satisfying an increasingly growing population¹¹⁵. Moreover, CityFood project, which is part of the Sustainable Urban Growth Initiative (SUGI) and is co-financed by the European Union and the Belmont Forum, aims to investigate how the water-farming systems (IAAC) can help address global food challenges by involving all the actors (experts in food science, ecology, modelling and planning) interested in examining the role of multi-trophic food production systems within urban context¹¹⁶. The multidisciplinary nature of the various stakeholders involved in this project, on the one hand, will therefore expand the knowledge and applicability of these innovative solutions while, on the other hand, the use of computer models will help to optimize the environmental, economic and social benefits of IAAC technology¹¹⁷. To achieve these goals, CityFood will bring together the international and interdisciplinary expertise of urban planners, farmers, community leaders and citizens committed to building strong networks with each other to develop and disseminate information on integrated water-farming systems. In this regard, six Work Packages (WP) have been defined.

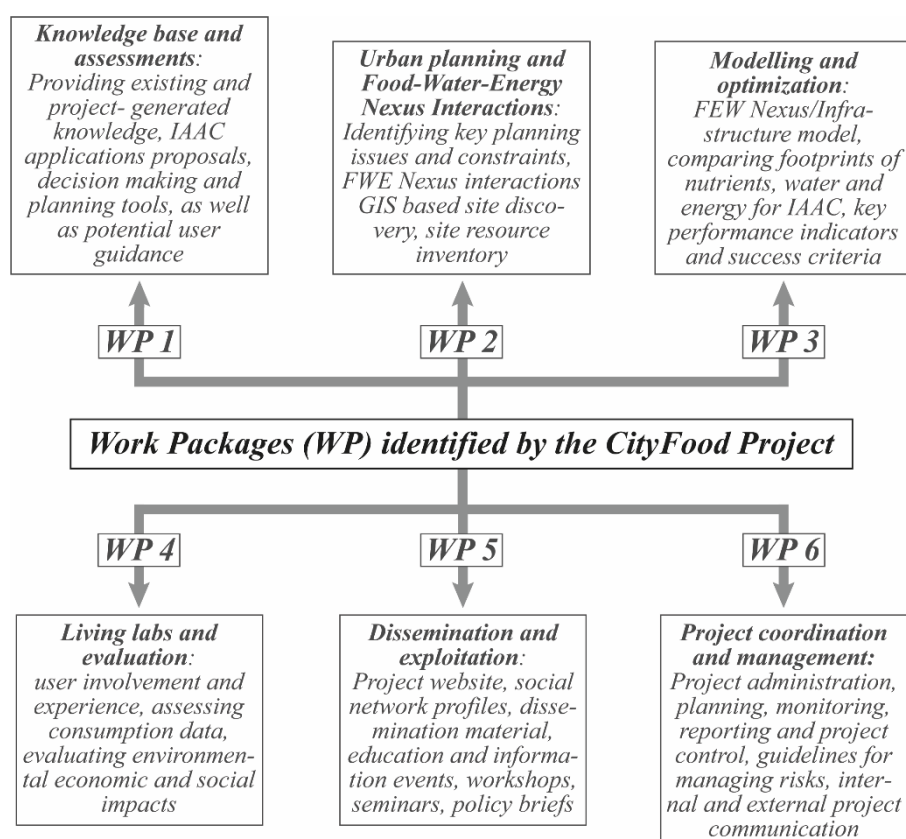


Figure 59 - Work Packages identified by the CityFood project. Source: own elaboration from: <https://www.cityfood-aquaponics.com/index.php/project-description/>

¹¹⁴ Source: <https://www.igb-berlin.de/en/project/cityfood> - visited on 23rd October 2020

¹¹⁵ Source: <https://www.cityfood-aquaponics.com/index.php/project-description/> - visited on 23rd October 2020

¹¹⁶ Source: <https://www.h-klimek.de/cityfood/> - visited on 23rd October 2020

¹¹⁷ Source: <https://www.igb-berlin.de/en/project/cityfood> - visited on 23rd October 2020

In addition to these work packages, the CityFood project will incorporate several Living Labs to promote the IAAC concept as an innovative solution for food production in the urban environment. CityFood Living Labs will then be used to demonstrate the positive impact of IAAC systems and to provide examples and training to other stakeholders interested in creating IAAC systems such as schools, hospitals and shopping malls. Specifically, four Living Labs have been identified: one in the city of Sao Paulo in Brazil, one in Berlin in Germany and two in Grimstad and Arendal in Norway¹¹⁸.



Figure 60 - Geographical location of the Living Labs involved in the CityFood project. Source: own elaboration from: <https://www.h-klimek.de/cityfood/>

These four will aim to assess the environmental impacts of Living Labs by means of a Life Cycle Assessment (LCA) aimed at examining the environmental impacts associated with all phases of a product's life cycle from raw material to production, distribution, use, maintenance and consumption. Within these laboratories, users will be deeply involved in the implementation and operation of the living laboratories themselves, participating in experiments aimed at determining the suitability and acceptability of different species of fish and plants for urban food production¹¹⁹.

Tabel 12 - Expected results from the Work Packages within the CityFood project. Source: own elaboration from: <https://www.cityfood-aquaponics.com/index.php/project-description/>

Expected result from the different Work Packages (WPs)	
Result	Purpose
Knowledge Base	<i>Providing comprehensive knowledge about the IAAC technology to different stakeholders both for scientific and commercial application</i>
Urban Concepts and Modelling	<i>GIS based site discovery, site resource inventory, identified key planning issues and constraints, FWE Nexus footprint model, strategies to adapt and implement IAAC systems into the urban environment</i>
IAAC Modelling	<i>Models that simulate the performance of IAAC systems</i>
Living Labs	<i>Demonstration of the practicability and feasibility of the innovative IAAC solution to address FWE Nexus challenges, evaluating user experiences</i>
Urban Food-Energy-Water (FEW) Impacts Assessment	<i>Evaluation of the effects of food production in direct proximity to the consumers in environmental, economic and social terms</i>

¹¹⁸ Source: <https://www.h-klimek.de/cityfood/> - visited on 23rd October 2020

¹¹⁹ Source: <https://www.cityfood-aquaponics.com/index.php/project-description/> - visited on 23rd October 2020

Dissemination and Exploitation	<i>Disseminating and promoting the idea of IAAC to different stakeholders, contribution to environmental education and stimulation of environment-related communication between citizens</i>
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2.2.10. Food Heroes

The project "Food Heroes - Improving resource efficiency through designing innovative solutions to reduce food waste" focuses its attention on innovative food entrepreneurs who work on reducing food losses that occur in the early "neglected" stages of the food chain. However, since its entry into force in 2016, the project in question aims to eliminate food losses from the European territory with particular reference to three food sectors: i) fish; ii) meat; iii) fruit and vegetables.



Figure 61 - Main solutions against food waste generated from the Food Heroes project. Source: own elaboration from: <https://www.nweurope.eu/projects/project-search/food-heroes-improving-resource-efficiency-through-designing-innovative-solutions-to-reduce-food-was>

The central pillar of Food Heroes is identified in the development, testing and implementation of fifteen innovative solutions involving at least 120 small-medium enterprises characterized by innovative technologies and value-added solutions¹²⁰. It is also very important to underline that this project embraces a co-creative design approach in order to collaborate across North-West Europe between innovative regions and its

¹²⁰ Source: <https://www.nweurope.eu/projects/project-search/food-heroes-improving-resource-efficiency-through-designing-innovative-solutions-to-reduce-food-waste/#tab-1> - visited on 23rd October 2020

followers. In Food Heroes the capacity for eco-innovation will be enhanced by boosting the speed of innovation adaptation from innovation leaders to innovation followers. The number of partners involved in this project are twelve and are located in six different countries across North-West Europe (Netherlands, Belgium, France, Denmark, Ireland, United Kingdom)¹²¹. Working together, these partners have developed multiple solutions against food waste for each food sector took into consideration¹²².

¹²¹ Source: <https://www.nweurope.eu/projects/project-search/food-heroes-improving-resource-efficiency-through-designing-innovative-solutions-to-reduce-food-waste/#tab-1> - visited on 23rd October 2020

¹²² Source: <https://www.nweurope.eu/projects/project-search/food-heroes-improving-resource-efficiency-through-designing-innovative-solutions-to-reduce-food-waste/#tab-6> - visited on 23rd October 2020

2.2.11. Comparison of the European Projects

This concluding paragraph is aimed at offering an overall picture of the various European projects taken into consideration. To this end, a comparative table has been drawn up in which all the information and all the main characteristics of the ten projects under analysis have been identified. More precisely, the table in question is made up of various fields (Project Status, Location, Objectives, Actors Involved and Relations with Planning), each of which allows a clear understanding of the nature and importance of each individual project analyzed.

Tabel 13 - Analysis and comparison of the European projects. Source: own elaboration

Analysis & Comparison of the project taken into consideration				
Project	Place	Main Goals	Actors involved	Relation with the Planning Field
Agromere	•Almere (Netherlands)	Integrate agriculture into the modern life of the city	<ul style="list-style-type: none"> •Almere City Council •Stakeholders •Farmers •Nature and environmental organizations •Small and Medium-size enterprises 	The concept of “ecology” and “sustainability” have been included into the plans to regulate the expansion of the city
		Creating a new residential district in which agriculture was fully integrated		Urban Agriculture has been included into the city’s development plans
Urbact III	•EU Members State (28)	Promote integrated and sustainable urban development in European cities	•Member cities	Encourages the creation of a network of European cities engaged in the design of food plans that can extend from urban and peri-urban areas through a corridor that facilitates urban-rural reconnection
		Enable cities to work together to develop integrated solutions to common urban challenges by networking and identifying good practices to improve urban policies		URBACT programme helps and supports member cities to develop pragmatic solutions that are new and sustainable but, above all, that integrate environmental, economic, social and governmental issues
Superbfood	<ul style="list-style-type: none"> •Rotterdam •Ghent •London •Vigo •Rome •Riga 	Improve the sustainability of agriculture and food supply within European city-regions and in the Global South by developing a number of innovative approaches	<ul style="list-style-type: none"> •Research Groups •Small and Medium-Enterprises involved in the agri-food sector 	Small and medium enterprises, together with researchers, tried to develop, implement and evaluate new techniques, strategies aimed at improving the short chain delivery of food and the multifunctional use of land in urban and peri-urban areas
		Describe and analyze the agro-food dynamics, policies and governance agreements in different European city regions		

Food Meters	<ul style="list-style-type: none"> • Rotterdam • Berlin • Ljubljana • London • Milan • Nairobi 	<i>Assess the environmental and socio-economic impacts of food chains by referring to the spatial, logistical and resource dimensions of food growth and food planning and governance</i>	<ul style="list-style-type: none"> • Actors involved in the whole food chain • Stakeholder 	<i>Stakeholders from urban and peri-urban agriculture, the food sector, governance, and civil society through a knowledge-driven debate sought to optimize regional food supply in metropolitan areas around cities through sustainable and innovative food chain planning and governance</i>
		<i>Identify opportunities to increase and diversify agriculture and food supply and to shorten food chains in metropolitan regions</i>		
Capsella	<ul style="list-style-type: none"> • Greece • Italy • UK • Belgium • Czech Republic • Netherlands 	<i>Actively promote agricultural production systems and behaviours that are alternative but at the same time respect the environment and bring out the importance of diversity</i>	<ul style="list-style-type: none"> • Communities involved in the project • Civil society • Researchers 	<i>The project used a bottom-up approach in order to develop efficient solutions that can meet the needs of communities</i>
		<i>Strengthen collaboration within and between communities</i>		
		<i>Support policy dialogue and development in the field of sustainable agri-food production</i>		
		<i>Develop an open source platform to support community-based initiatives on biodiversity in agri-food systems and food quality</i>		
FoodE	<ul style="list-style-type: none"> • Italy • France • Spain • Netherlands • Germany • Norway • Romania • Slovenia 	<i>Accelerate the growth of City-Region Food System (CRFS) by linking several local initiatives across Europe through a joint development and dissemination of new tools</i>	<ul style="list-style-type: none"> • Universities • Research Institute • Small-Medium Enterprises (SMEs) • City Councils 	<i>Implementing and scaling-up City Region Food System pilot projects involving coastal, rural and urban areas</i>
ProIGreg	<ul style="list-style-type: none"> • Dormund • Turin • Zagreb • Ningbo • Cascais • Cluj-Napoca • Pieraus • Zenica 	<i>Creating the so called "Living Labs", which can be considered as specific areas where "Nature-Based Solutions" (NBSs) will be tested and developed within a real-life environment</i>	<ul style="list-style-type: none"> • Researchers • Scientists • Educators • Citizens 	<i>This project seeks to initiate a process of transformation towards a more sustainable future implies the need for sustainable cities in which green and nature-based solutions play a key role in everyday urban life</i>

Skin	<ul style="list-style-type: none"> •Fifteen European Countries 	<i>The intention of establishing a European association capable of working steadily to improve the efficiency of SFSCs in order to enhance the growth of the sector itself</i>	<ul style="list-style-type: none"> •Stakeholder Community •Citizens •Producers 	<i>Involvement of communities through the organization of workshops aimed at raise awareness on issues related to the good practices exchange of experiences, innovative ideas and projects and overall the possibility of spreading across EU regions and territories efficient management of short supply chains</i>
CityFood	<ul style="list-style-type: none"> •Grimstad •Arendal •Sao Paulo •Berlin 	<i>Address a number of scientific, environmental and social issues related to supply chain optimization and regulatory acceptance of integrated water-farming</i> <i>CityFood project will incorporate several Living Labs to promote the water-farming system as an innovative solution for food production in the urban environment</i>	<ul style="list-style-type: none"> •Urban Planners •Farmers •Community Leaders •Citizens 	<i>CityFood can help address global food challenges by involving experts in food science, ecology, modeling and planning who are all interested in examining the role of multi-trophic food production systems within urban contexts</i>
Food Heroes	<ul style="list-style-type: none"> •Netherlands •Belgium •France •Denmark •Ireland •UK 	<i>Innovative food entrepreneurs who work on reducing food losses that occur in the early "neglected" stages of the food chain</i> <i>Eliminate food losses from the European territory with particular reference to three food sectors (Fish, Meat, Fruits & Vegetables)</i>	<ul style="list-style-type: none"> •Farmers •Producers •Small-Medium Enterprises 	

CHAPTER 3

The relation between Spatial Planning and Food Planning: an overview of International Case Studies

Because the majority of the population now lives in urban areas, not only in large cities but also in secondary and small towns and cities, it is increasingly important to pay more attention to urban planning as a way to influence the development of food systems. These systems, referring to the range of activities through which food is produced, processed, distributed, prepared and consumed, play a central role in implementing the sustainable development agenda (RUAF, 2015). Urban planners, until recently, had never paid sufficient attention to food systems because they focused more on '*traditional*' urban priorities such as public transport and respectable housing. However, with the beginning of the new millennium, the main national associations of urban planners began to notice this lack of attention to food which proved to be the magnet for creative urban planning (Cabannes & Marocchino, 2018). For these reasons, national governments have now recognized through the New Urban Agenda, the importance of local governments in the implementation of Agenda 2030 in which food and good nutrition are considered as central arguments. On the other hand local governments, even if with limited resources, have begun to promote the idea of a food system planning as a fundamental factor to ensure better well-being through the availability and access to good nutrition for all inhabitants of the city (Cabannes & Marocchino, 2018).

In this particular context, the United Nations Food and Agriculture Organization (FAO) has increasingly become a catalyst in multilateral governance mechanisms on urban sustainability and in helping sub-national governments to promote resilient and sustainable food systems. Nevertheless, the growing demand for this assistance deserves more effective attention on the significance of good food system planning. This requires careful study of all the successful examples of urban and food system design and planning in different social, economic and environmental contexts. All of these aspects together prove to be useful to generate a clear understanding of the local situation, both to provide a solid basis for food system planning that is able to relate urban planning and food system competencies (Cabannes & Marocchino, 2018). The FAO, referring to the concept of the City-Region Food System (CRFS), invites to go "*beyond the limits of the city*" and consequently pay more attention to the spatial dimension.

This broader vision, proves to be fundamental at a time when urban and regional planners want to develop an "*approach that aims to foster the development of resilient and sustainable food systems within urban, peri-urban and rural areas surrounding cities by strengthening rural-urban linkages*"¹²³. Kevin Morgan argues that the growth of the phenomenon of food planning, understood as a growing movement and practice, "*involves more than professional planners, as it is a very diverse social movement in which planners are a group among a "cocktail" of organizations from the professions, civil society organizations and municipal government departments, all of which can claim to be part of the food planning movement*" (Morgan, 2013). Furthermore, according to urban planner Rosita T.Ilevia, food system planning can be defined as a social innovation

¹²³ Source: <http://www.fao.org/in-action/food-for-cities-programme/overview/what-we-do/en/> - visited on 29th October 2020

in which government planners, architects, researchers and activists step out of their everyday lives and their traditional skills to engage in achieving food system goals (Ilieva, 2016). However, what it means to move from being an urban planner to a food systems planner is clearly explained by Wendy Mendes who, between 2001 and 2015, held the role of planner at the City of Vancouver. Her reflections on the figure and role of the planner, offer multiple interesting insights from which it is possible to identify three different issues related to planning: i) the need to educate other planners on the theme of food understood as a system; ii) imagining food systems as a means of education and a catalyst to bring together different people and institutions; iii) the need to connect food systems to other urban systems.

In this regard, during the American Planning Association (APA) interview organized in 2015, Wendy Mendes stated that *"[...] I've spent a lot of time educating my colleagues about food as a system and how the food system is connected to other urban systems and so, we need to look at the connections between transportation, housing, economic development, public spaces, and so on. If you're a systems planner who wants to connect the dots and work within and across systems, you're not going to be a particular type of planner. Personally, I think we need planners who can think using a systems approach and connect systems, including the food system"*¹²⁴.

3.1. Case studies in the international context

Cities around the world are emerging as *"deliberative spaces"* within which food governance systems are increasingly being shaped. However, these spaces also represent a meeting place between civil society, private actors and the local state for the transition to fairer and more sustainable urban food systems. As a result, an alliance between the local state and civil society in the design and development of urban food policies inevitably emerges. Notwithstanding, it is worth asking ourselves few questions such as *"What are the most appropriate and appropriate forms of organization for the task?"* or *"Who are the actors involved in the respective implementation?"* (Morgan & Moragues-Faus, 2015). Using these two questions as starting points, a detailed analysis of several international and national case studies will be developed within this third chapter. The goal behind this process of analysis is identify the processes, methods and timing through which the themes of food and nutrition have been gradually inserted into the planning processes. In this regard, the choice of the case studies has fallen, on the one hand, on the realities of Vancouver and London that can be considered as two of the pioneer cities in the inclusion of food and nutrition themes within urban planning practices. On the other hand, instead, the cities of Turin and Milan were taken into consideration because within national boundaries, although in totally different ways, they are facing a process of transition towards more sustainable and resilient food systems since few years now. The combination of all these aspects and changes has led cities to the adoption of several *"Food Plans"*, *"Food Charts"*, *"Food Atlas"*, programs, policies and strategies specifically related to food and nutrition.

¹²⁴ Source: <https://apafig.wordpress.com/2015/11/02/faces-of-food-systems-planning-wendy-mendes/> - visited on 29th October 2020



Figure 62 - Geographical location of the case studies taken into consideration. Source: own elaboration

3.1.1. London: transformation of urban neighbourhoods

The London region, also known as “*Greater London*”, includes the City of London and 32 borough councils and is surrounded by the South East and East of England Regions. According to Eurostat, the Greater London is the most densely populated and wealthy region in the UK. In 2018, it had a population of 8.8m, which represents 13.4% of the UK’s total population. Moreover, we can consider the city of London as one of the handful of truly global cities¹²⁵. Adapted to its status as a world city, London also possesses an extraordinary food culture as there are high-profile restaurants, stores of all sizes selling products from all over the world, and cuisines as diverse as the city’s conspicuous population. However, behind this first impression, the city hides an extraordinary infrastructure of growers, producers, transporters and wholesalers who guarantee millions of people daily a choice between diversified and quality food (London Development Agency, 2006).

While on the one hand this huge, demanding and competitive market offers employment to tens of thousands of people, on the other hand it also creates problems related to this abundance. In this regard, the ex-mayor of the city, Ken Livingstone, declared that: “[...] *obesity and diet-related illnesses account for a huge number of premature deaths in London, with many on low incomes suffering disproportionately. In many parts of London, people struggle to access affordable and nutritious food*”¹²⁶.

The London Food Board and the Mayor’s Food Strategy

For the city of London, the journey through food issues began in 2004 when the Food Council, commonly known as the London Food Board (LFB), was established. The

¹²⁵ Source: <https://ec.europa.eu/growth/tools-databases/regional-innovation-monitor/base-profile/london> - visited on 1st November 2020

¹²⁶ Source: https://www.london.gov.uk/sites/default/files/the_mayors_food_strategy_2006.pdf - visited on 1st November 2020

LFB is composed by 16 individuals whose primary purpose is: advising the Mayor and the Greater London Authority (GLA) on food issues affecting Londoners¹²⁷

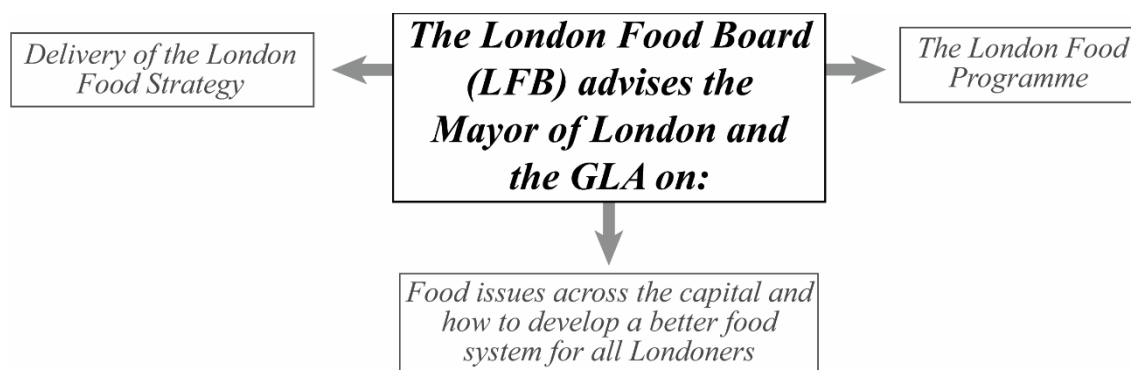


Figure 63 - Main goals of the London Food Board. Source: own elaboration from: <https://www.london.gov.uk/what-we-do/business-and-economy/food/london-food-board#acc-i-47402>

Rosie Boycott, chair of the London Food Board, said: “the new London Food Board puts the Mayor and the capital in a great position to tackle some of the complex problems which exist in this area, not least tackling food poverty and food waste. We will be developing a new Mayoral London Food Strategy integrating food across all the areas it impacts, and I’m confident the Board’s members will bring their expertise to bear on this and many other issues”¹²⁸. This statement demonstrates how the LFB has proved useful for the development of the Mayor's London Food Strategy.

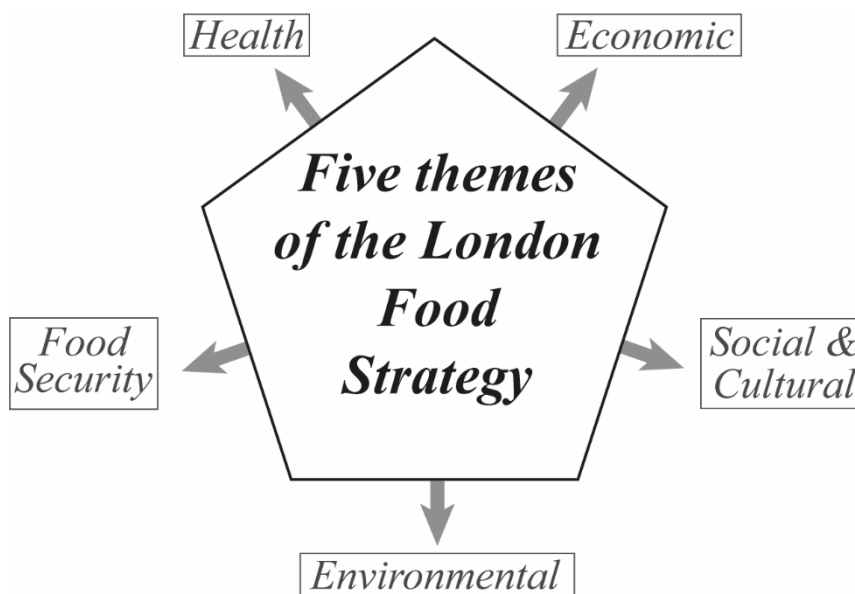


Figure 64 - Main themes of the London Food Strategy. Source: own elaboration from: (London Development Agency, 2006)

The London Food Strategy, developed in 2006, clearly defines what the Mayor's plans are for helping londoners access healthy, affordable and sustainable food, regardless of their background and circumstances. Since his first mandate, the current Mayor of London, Sadiq Khan, has turned food in a key part of his agenda for social equity and

¹²⁷ Source: <https://www.london.gov.uk/what-we-do/business-and-economy/food/london-food-board> - visited on 1st November 2020

¹²⁸ Source: <https://www.london.gov.uk/press-releases/mayoral/mayor-unveils-new-london-food-board> - visited on 1st November 2020

economic equality. By putting food at the heart of the approach, it has been possible to address a range of issues including childhood obesity, food insecurity and climate change¹²⁹. In order to ensure access to healthy, convenient and sustainable food, it was therefore necessary to define a series of multiple actions¹³⁰:

- 1) ***Good Food at Home, and Reducing Food Insecurity*** - Helping to ensure all Londoners can eat well at home and tackling rising levels of food insecurity.
- 2) ***Good Food Economy, Shopping and Eating Out*** - Supporting good food businesses to improve London's food environment and make healthy, affordable options more widely available to Londoners.
- 3) ***Good Food in Community Settings and Public Institutions*** - Working with public sector partners to improve their food procurement for the communities they serve.
- 4) ***Good Food for Pregnancy and Childhood*** - Using good food to help give Londoners the best possible start to life.
- 5) ***Good Food Growing, Community Gardening and Urban Farming*** - Promoting the multiple benefits of food growing for individuals and communities.
- 6) ***Good Food for the Environment*** - Reducing the environmental impact of our food system by making it more efficient, more sustainable and less wasteful.

Food Flagship

For the city of London, another very important milestone regarding food-related issues is the year 2014, in which, the "*Food Flagship*" program was launched. This was a program whose primary objective was to transform, change and modify the whole food environment of two particular neighborhoods (Croydon and Lambeth). The "*Food Flagship*" program was primarily aimed to improve the quality of food available to the soles and communities, secondly it was focused on raise awareness about the effects of diet on human's health and thirdly it tried to develop practical culinary skills and encourage a love of good food¹³¹. The districts of Croydon and Lambeth, have been chosen to be the first districts to develop multiple projects, between 2014 and 2017, aimed at tackling obesity among children and adults and support families to live longer and

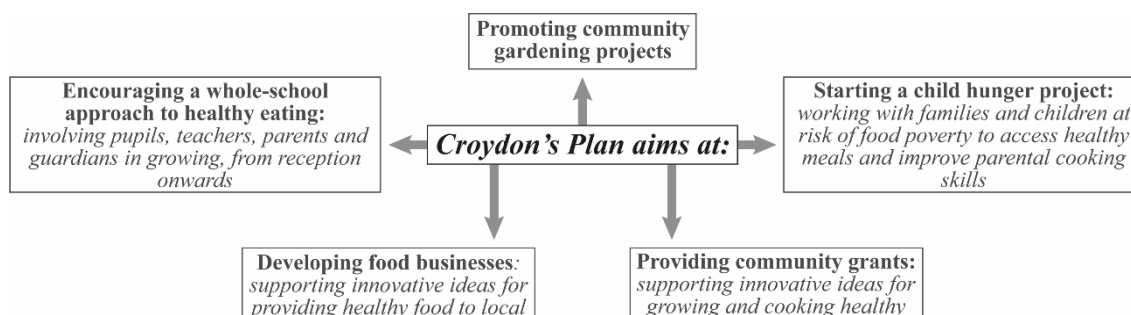


Figure 65 - Main actions promoted and included in the Croydon's Plan. Source: own elaboration from: <https://www.london.gov.uk/what-we-do/business-and-economy/food/food-flagships/croydon-food-flagship>

¹²⁹ Source: <https://www.london.gov.uk/press-releases/mayoral/mayor-unveils-new-london-food-board> - visited on 1st November 2020

¹³⁰ *Ibid.*,

¹³¹ Source: <https://www.london.gov.uk/what-we-do/business-and-economy/food/food-flagships/about-food-flagships> - visited on 1st November 2020

healthier lives¹³². In particular, the Croydon Food Flagship aimed to encourage people to grow their own food, learn how to cook healthier meals and understand the importance of a balanced and nutritious diet in preventing obesity. That's why, the Croydon District used food to transform the environment, improve health, combat obesity and reduce health inequalities in the district¹³³.

Food Flagship program have also strongly influenced the schools of the Croydon district and that is the reason why Croydon's Food Flagship Schools has supported school leaders, caterers, staff, students and parents during the first two years of the program to help schools meet and exceed the National School Food Plan's best practice recommendations. The schools themselves were focused on keeping both children and adults away from sweet and fizzy drinks. They wanted to entice pupils back to school dinners by offering more nutritious menus and improving the overall dining experience. In order to achieve this, the Croydon's Food Flagship Schools project included¹³⁴:

- 1) *Creating "edible playgrounds"*
- 2) *Improving breakfast clubs*
- 3) *Embedding food education into their curriculum*
- 4) *Building on their food, crop growing and gardening projects*
- 5) *Cooking classes with pupils, teachers and parents*

¹³² Source: <https://www.croydon.gov.uk/healthsocial/phealth/croydons-food-flagship-programme/croydons-food-flagship-programme#> - visited on 1st November 2020

¹³³ Source: <https://www.london.gov.uk/what-we-do/business-and-economy/food/food-flagships/croydon-food-flagship> - visited on 1st November 2020

¹³⁴ *Ibid.*,

3.1.1. Vancouver: systemic approach to food policy and planning

The City of Vancouver together with the regional Metro Vancouver District, which represents a federation of 21 municipalities that plan and provide services on a regional scale in a collaborative manner¹³⁵, have worked hard since 2003 supporting a fair and sustainable food system. For this reason, the city's commitment is to create a food system that does not preclude community development. Hence, the City of Vancouver by adopting a systemic approach to food policy and planning, takes into account all aspects of the food system (City of Vancouver, 2013). Nonetheless, while the food system is very robust due to the interest of citizens and other community food projects, there are several vulnerabilities among which it is possible to identify a clear income gap, social polarization and rising rates of hunger and preventable diseases. These challenges, combined with climate change, loss of agricultural land and increasingly distant food supply chains, have made it necessary to strengthen the resilience of the Vancouver food system. As a main consequence of that, in 2004 the Vancouver Food Policy Council (VFPC) was established. This VFPC, can be intended as an official civic agency that advises the City Council and its staff on improving food sustainability within the city, including program and policy changes to improve the local food system. Moreover, the work of the VFPC seeks to provide support in order to improve food sustainability within the city itself¹³⁶.

However, with the establishment of the Food Policy Council policies and programs, Vancouver began to develop systematically combining actions of the City Council and the Park of Vancouver (Calori & Magarini, 2015). Subsequently, in January 2007, the Canadian government, responding to the growing need for food system planning and the development of an integrated food policy, has published the Vancouver Food Chart, which represents a vision for a food system that benefits communities and the environment. This document further illustrates the city's commitment to the development of a coordinated municipal food policy driven by community engagement and participation in food security actions (City of Vancouver, 2007). Moreover, the vision expressed in this document is based on five principles: *i)* community economic development; *ii)* ecological health; *iii)* social justice; *iv)* collaboration and participation; *v)* celebration.

¹³⁵ Source: <http://www.metrovancouver.org/about/Pages/default.aspx> - visited on 2nd November 2020

¹³⁶ Source: <https://www.vancouverfoodpolicycouncil.ca/about/terms-of-reference/> - visited on 2nd November 2020

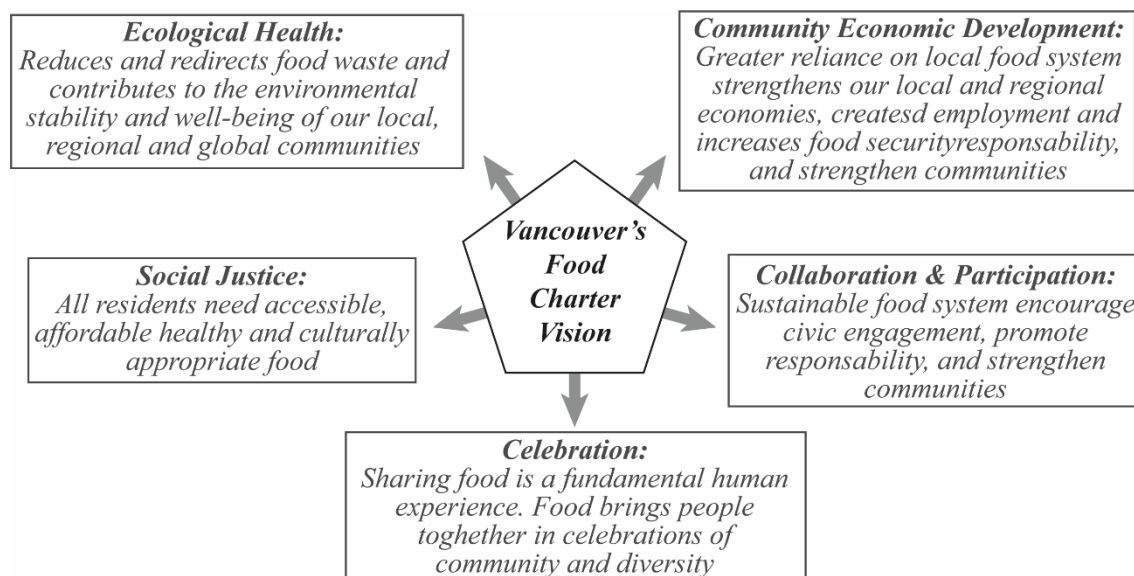


Figure 66 - Five main principles included within the Vancouver's Food Charter Vision. Source: own elaboration from: (City of Vancouver, 2007)

In order to create a fair and sustainable food system, the Vancouver Food Chart suggests some actions such as for example: *i)* support general farmers and food producers; *ii)* expand urban agriculture and food recovery opportunities; *iii)* support sustainable agriculture and preserve farm land resources; *iv)* improve access to healthy and affordable foods. Following the guidelines offered and included in this document, multiple policies and programs began to develop within the city of Vancouver: *i)* guidelines for urban agriculture (2009); *ii)* guidelines for keeping backyard hens (2010); *iii)* program for the collection of waste (2010); *iv)* street-food program expansion (2010-2012); *v)* Green City Action Plan: Local Food (2011). Combined together, all these programs and policies led, in 2013, to the drafting of the Vancouver Food Strategy (Calori & Magarini, 2015)

Tabel 14 - Main programs developed and included in the Vancouver Food Strategy. Source: own elaboration

Vancouver Food Strategy		
Program	Year of development	Purpose
Guidelines for urban agriculture	2009	Provide guidance to proponents on the design of urban agriculture installations where they are proposed
Guidelines for keeping backyard hens	2010	Provide recommendations regarding the keeping of backyard hens, including zoning requirements, animal control regulations, and funding for animal shelter facilities to house impounded and abandoned hens
Program for the collection of the waste	2010	Provide an overview of who are the responsible actors in charge of collecting each type of waste generated by citizens
Street-food program expansion	2010-2012	Increase citizens' food choices in the street food sector. Vendors will be encouraged to offer greater food diversity, better nutritional value and use of local raw materials
Green City Action Plan: Local Food	2011	Green City Action Plan is a strategy for staying at the forefront of urban sustainability. A stronger local food system allows for greater reductions in the environmental impact of food production and transportation while also contributing to human health

Not losing sight of the primary objective of helping the city to plan and create a sustainable food system, Vancouver's food strategy not only defines the objectives, actions and goals to be achieved, but also defines a vision. In this regard, it is important to underline how the food strategy focuses mainly on five priority areas within which it identifies a series of actions. In spite of that, it is wrong to think that no further actions will be identified in addition to those defined for the five priority areas, since the latter have the role of offering a first orientation for the actions inherent to the food system that will be identified and defined in future (City of Vancouver, 2013).

Tabel 15 - Priority actions areas of the Vancouver Food Strategy. Source: own elaboration from: (City of Vancouver, 2013)

Fields of application of the Vancouver Food Strategy	
Action Area	Priority focus
Food production	<i>Support and enable all forms of urban agriculture (specifically community gardens and urban farms), and make stronger connections with all parts of the food system.</i>
Empowering residents	<i>Enhance access for individuals to participate in the activities of neighbourhood food networks and other community-based food programs, particularly for vulnerable and isolated groups</i>
Food Access	<i>Improve access to healthy, local, affordable food for all by increasing the number of healthy food retail including farmers markets, community food markets, and piloting healthy food retail programs</i>
Food processing & distribution	<i>Address gaps in local food processing, storage and distribution infrastructure by exploring possibilities that might include a food business incubator or food hub</i>
	<i>Increase the percentage of local and sustainable food purchased by City facilities.</i>
Food waste	<i>Reduce food waste destined to landfill or incinerator</i>
	<i>Expand and support food waste disposal programs</i>
	<i>Expand local collection and composing options</i>

While the city of Vancouver has focused more on making the food system more sustainable on a city/local scale, as part of its commitment to a sustainable future for the entire region and its people, Metro Vancouver has worked with others actors to create a sustainable, resilient and healthy food system that contributes to the well-being of all residents and the economic prosperity of the region while preserving its ecological legacy (Metro Vancouver, 2011).



Figure 67 - Main goals of the Vancouver's Regional Food System Strategy. Source: own elaboration from: (Metro Vancouver, 2011)

Following this regional development, in 2011, the Regional Food System Strategy (RFSS) was implemented, demonstrating how actions at the regional level can lead us toward a sustainable, resilient and healthy food system¹³⁷. Combining together the five goals of the Regional Food Strategy System, twenty-one different strategies can be identified that highlight the multiple opportunities for all levels of government, the private sector, and civil society in promoting actions that support the vision and public benefits of the regional food system.

Tabel 16 - Goals and strategies of the Regional Food System Strategy of Metro Vancouver. Source: own elaboration from: (Metro Vancouver, 2011)

The Regional Food System Strategy of Metro Vancouver		
Goal	Aim of the Goal	Strategy
Goal 1	Increased capacity to produce food close to home	Protect agricultural land for food production
		Restore fish habitat and protect sustainable sources of seafood
		Enable expansion of agricultural production
		Invest in a new generation of food producers
		Expand commercial food production in urban areas
Goal 2	Improve the financial viability of the food sector	Increase the capacity to process, warehouse and distribute local foods
		Include local foods in the purchasing policies of large public institutions
		Increase direct marketing opportunities for local foods
		Further develop value chains within the food sector
		Review government policies and programs for ensuring the expansion of the local food sector
Goal 3	People make healthy and sustainable food choices	Enable residents to make healthy food choices
		Communicate how food choices support sustainability
		Enhance food literacy and skills in schools
		Celebrate the taste of local foods and the diversity of cuisines
Goal 4	Everyone has access to healthy culturally diverse and affordable food	Improve access to nutritious food among vulnerable groups
		Encourage urban agriculture
		Enable non-profit organizations to recover nutritious food
Goal 5	Consistent food system with ecological health	Protect and enhance ecosystem goods and services
		Reduce waste in the food system
		Facilitate adoption of environmentally sustainable practices
		Prepare for the impacts of climate change

While the overall framework of the Regional Food System Strategy considers the role of stakeholders throughout the food system, the Food System Action Plan, developed in 2016, adopts a narrower focus concentrating on the actions that local governments plan to take between 2016 and 2020 that will concretely advance implementation of the RFSS. This Action Plan also identifies a number of new strategies and collaborative actions that local governments are jointly undertaking to advance efforts towards a resilient and sustainable food system in Metro Vancouver (Metro Vancouver, 2016). (Metro Vancouver, 2016).

¹³⁷ Source: <http://www.metrovancouver.org/services/regional-planning/agriculture/rfs-strategy/Pages/about-the-strategy.aspx#> - visited on 2nd november 2020

3.1.3. Comparison of international case studies

Tabel 17 - Analysis of the London case study. Source: own elaboration

	Scalability	Tools	Goal of the tool	Actors involved	Relations with Planning field	Main target of the Case Study
LONDON (UK)	City & Local Level	London Food Board (2004)	Help and advise the Mayor and GLA on food issues affecting londoners	<ul style="list-style-type: none">• Urban dwellers• Mayor• City Council• Food Producers• Children• Public sector partners	All the objectives and actions contain commitments that are quantitatively and qualitatively measurable. With the approval of the Food Strategy, two Implementations Plans have been formulated in order to verify the implementation of the defined actions	<ul style="list-style-type: none">• Improve the health of londoners through the food eaten• Reduce the carbon footprint and environmental impact of the food industry• Support the food economy• Celebrate the diversity of food culture• Develop food security
		London Food Strategy (2006)	Represents the goals and ideas of the Mayor in order to help londoners access healthy, affordable and sustainable food, regardless of their background and circumstances	<ul style="list-style-type: none">• Local communities	In order to achieve the objectives identified the planning process adopted by the City of London, is characterized by a synergy with other subjects such as: private sector, government and national agencies, voluntary organizations	
		"Food Flagship" Program (2014)	Transform, change and modify the whole food environment of two neighborhoods (Croydon and Lambeth)			

The two international cases analyzed and discussed in this third chapter, has been selected for their focus on recognizing and integrating food issues and food itself within the urban planning process. In this regard, it can be seen that in both cases taken into consideration, city administrations and institutions have clearly expressed their willingness to initiate a process of transformation towards more sustainable and resilient paradigms regarding not only urban development but also the food system. For these reasons, the processes, actions and actors involved in the cities of London and Vancouver, are almost identical. In both cities, a central and very important role is played by the citizens and the different local communities that characterize their respective territories. Respectively, in the case of London, this aspect is strongly accentuated in the "Food Flagship" Program in which attention is focused on two particular districts of the city in which an attempt was made to change the food environment by involving and raise awareness on individuals about the effects that healthier and more sustainable food choices could have on their diets and health.

Tabel 18 - Analysis of the London case study. Source: own elaboration

	Scalability	Tools	Goal of the tool	Actors involved	Relations with Planning field	Main target of the Case Study
VANCOUVER (Canada)	City & Regional Level	Vancouver Food Policy Council (2004)	<i>Provide support in order to improve food sustainability within the city itself</i>	<ul style="list-style-type: none"> • City Dwellers • Regional municipalities • Stakeholder • Food producers • Institutional actors Food Council	<i>The City of Vancouver has been committed over the years to creating a food system that in all ways does not preclude community development. For these reasons the City itself, by taking a systems approach to food policy and planning, considers every aspect of the food system.</i>	<i>Vancouver wants to become the world leader in urban food system management, it has set itself the goal of increasing city and neighborhood food assets by 50% by 2020. This goal is achieved through the involvement of food hubs, community kitchens, farmers markets, horticulture and urban farms</i>
		Vancouver Food Chart (2007)	<i>Illustrates the city's commitment to the development of a coordinated municipal food policy driven by community engagement and participation in food security actions</i>			
		Regional Food System Strategy (2011)	<i>Demonstrate that actions at the regional level can lead toward a more sustainable, resilient, and healthy food system</i>		<i>The City of Vancouver at both the local/city and regional levels has adopted a planning process with a strong focus on cooperation between authorities and citizens. This is due to the city's own desire to achieve social equity and justice, civic engagement, economic development of the entire community</i>	
		Food System Action Plan (2016)	<i>Focused on the actions that local governments plan to take between 2016 and 2020 that will concretely advance implementation of the RFSS</i>			

In the Canadian context, on the other hand, the presence and involvement of the community can be seen mainly within the Food Charter in which the city's commitment to the development of a food policy is guided and coordinated according to the ideas and needs of citizens. However, by analyzing in detail the two case studies, it is clear that the only substantial difference between the two realities lies in the territorial scale to which the two contexts refer. If, on the one hand, the city of London focuses exclusively on the local and city scale, on the other hand, the city of Vancouver, flanked by Metro Vancouver, focuses on both the local and city scale, as well as on the regional one, affecting and including all the 21 municipalities located in the metropolitan district.

3.2. The Italian context: from National to Local scale

3.2.1. Italian food strategies and policies

The expression "*Food Policy*" refers to the set of all those policies, articulated in programs and actions, that aim to connect stakeholders with the theme of food, in order to define spheres of action, objectives and procedures for the design, implementation and measurement of actions that have effects at the public level (Calori, 2018). As already mentioned, the first signs of interest in addressing challenges to urban systems at the urban level developed during the 1980s and 1990s mainly in Canada and North America. Overseas, food systems began to be seen not only as a sum of sectoral policies but as a way of addressing some of the distortions that food economies and food consumption styles produced in terms of malnutrition and insufficient access to healthy, nutritious food (Marino & Giampiero, 2019). These considerations began to produce their effects also in Europe, where a more complex vision of the need to manage more effectively the inefficiencies that afflict the food supply chains, whose impacts fall on cities and their peri-urban and rural areas. For these reasons, in recent years, food-related issues and policies have become increasingly inter-connected and supported by institutional initiatives and various programs at local, national and international levels.

Like many other European cities, Italian realities have begun to focus on food issues generating, as a result, different local food policies. The first city that was deeply involved in the creation of food policies was Milan which, as will be analyzed in the following paragraphs, after the 2015 Expo formulated its own Food Policy (Marino & Giampiero, 2019). The process and the ways in which the city of Milan came to define its own food policy immediately became an example to be followed by other Italian cities such as Pisa, Livorno, Bergamo and Turin. Moreover, the city of Milan has also taken steps to form what is now identified as the Milan Urban Food Policy Pact (MUFPP) which represents a pact aimed at transform the actual food systems all around the world in a more sustainable and resilient way. The number of Italian cities that have signed the MUFPP has increased over time to a total of 24 out of 210 Italian cities worldwide¹³⁸. In addition to these 24 signatory cities, many others are substantially involved in the process of creating food policies, but they are not currently linked together, even though many of them belong to various international networks, including the "*Healthy Cities*" or "*Eurocities*" networks, which have specialized groups focused on this issue (Dansero, et al., 2018).

However, in Italy, due to a lack of a national strategy focused on food systems, initiatives concerning food policies have developed according to specific paths from one city to another, focusing on initiatives characterized by a lack of municipal coordination. (Marino & Giampiero, 2019). Therefore, in order to respond to an ever increasing demand for networking and cultural and scientific exchange, in January 2018 the Italian Local Food Policies Network was established. The latter was born from the conviction, increasingly confirmed by the growing pressure of bottom-up movements and the interest of various levels of local government, that working for a sustainable food system is now a priority to ensure the welfare of the urban, peri-urban and rural population¹³⁹. The

¹³⁸ Source: <https://www.milanurbanfoodpolicypact.org/signatory-cities/> - visited on 11th November 2020

¹³⁹ Source: <https://www.politichelocalicibo.it/chi-siamo/> - visited on 11th November 2020

mission of this Network was, first of all to be a place of debate and inspiration in a context in which many Italian cities seem to be interested in the theme of food but where there is rarely a commitment to concrete steps towards the coordination and integration of the many initiatives, projects and policies that different actors develop independently (Dansero, et al., 2018). Generally speaking, within the Italian context, there are a series of critical issues due to the difficulties inherent to the translation of plans, strategies and programs into actual actions on the territory and on the food system. It should also be noted that there is a greater concentration of policies in the central-northern regions, where the Milan's initiative emerges as the only case in Italy of effective implementation of a policy supported by the administration and financed by a private foundation such as the Cariplo Foundation (Marino & Giampiero, 2019). Furthermore, from the surveys conducted by the Italian Local Food Policies Network, two particular aspects emerge. If on the one hand the city of Rome, despite being one of the signatory cities of the MUFPP, has not yet adopted a food strategy either at municipal or metropolitan level, on the other hand an important innovation basin is represented by Tuscany where the cities of Pisa, Livorno and Lucca are very active in promoting food policies and strategies (Marino & Giampiero, 2019).

Tabel 19 - Italian regions and their main food-related policies, programs and strategies. Source: own elaboration from: (Marino & Giampiero, 2019)

Food-related policies and strategies in Italy		
Region	City	Policy and Strategies proposed
Piedmont	<i>Turin</i>	<i>Food Atlas</i>
		<i>Nutrire Torino Metropolitana</i>
Lombardia	<i>Milan</i>	<i>Milan Food Policy</i>
		<i>Milan Urban Food Policy Pact</i>
Trentino Alto Adige	<i>Trento</i>	<i>Feed Trento</i>
Toscana	<i>Lucca</i>	<i>Pact for Urban Food Policies</i>
	<i>Pisa</i>	<i>Food Plan</i>
	<i>Livorno</i>	<i>Food Strategy</i>
Veneto	<i>Venice</i>	<i>Preliminar Studies about Food Policy</i>
Lazio	<i>Viterbo</i>	<i>Food Waste Program</i>
Sicily	<i>Messina</i>	<i>Sustainable Food in Urban Communities</i>
Abruzzo	<i>Tollo</i>	<i>Food Policy</i>
Molise	<i>Castel del Giudice</i>	<i>Food Plan</i>
Basilicata	<i>Matera</i>	<i>Food Atlas</i>

District of Food

According to the Ministry of Agricultural, Food and Forestry Policies (MIPAAF), what are defined as "*Food Districts*", established by Law n.205 of December 27, 2017, constitute a new development model for the Italian agro-food sector. They were created to provide, on the one hand, additional opportunities and resources at the national level for the growth and revitalization of the food supply chains and the territories as a whole on the other¹⁴⁰. However, districts in agriculture can be also considered as an instrument of economic policy aimed at organizing and supporting local agricultural and agri-food production systems, in order to promote the development of communities in rural areas, whose historical and cultural identity becomes a distinctive feature and an element to be enhanced¹⁴¹.

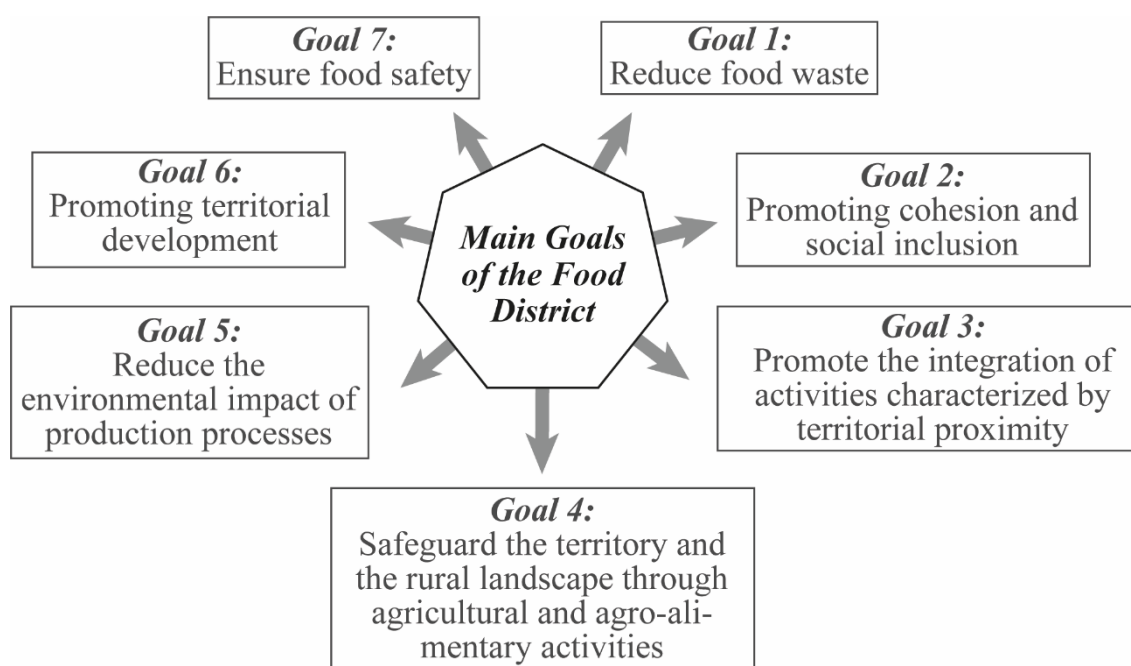


Figure 68 - Main goals of the Food District. Source: own elaboration from: <http://www.fidaf.it/index.php/i-distretti-del-cibo-novita-e-aspettative/?print=pdf>

Although there is an articulated variety of models adopted by the different Regions, these districts operate through the development of integrated planning of the district territory, which in turn involve both private and public initiatives in a synergistic way. Therefore, the food district need to be considered as a method of governance of rural systems, based on local public-private partnership and multi-level governance. In this regard, the districts represent a complete form of application of the principle of subsidiarity in the economic sphere, with effects of territorial rebalancing and significant social impacts, such as the contrast to the depopulation of these areas¹⁴². Moreover, the model of the Food Districts are also aimed at giving new impetus to the experiences of rural districts already present on the national territory, as well as to encourage the

¹⁴⁰ Source: <https://www.politicheagricole.it/flex/cm/pages/ServeBLOB.php/L/IT/IDPagina/14159> - visited on 10th november 2020

¹⁴¹ Source: <http://www.fidaf.it/index.php/i-distretti-del-cibo-novita-e-aspettative/?print=pdf> - visited on 10th november 2020

¹⁴² *Ibid.*,

emergence of new realities through the possibility of access to dedicated funding¹⁴³. Therefore, under the heading "*Food Districts*", in addition to those of Rural Districts and Agrifood Quality Districts, provided by Article 13 of the Orientation Law (2001)¹⁴⁴, fall other types that, in turn, include all those already established and tested previously by the Regions. Among these typologies is possible to recognized: *i*) districts in urban areas; *ii*) districts in peri-urban areas; *iii*) supply chain districts; *iv*) agro-industrial districts; *v*) districts in organic areas; *vi*) districts of organic production¹⁴⁵. Furthermore, in order to have a more efficient monitoring phase of the respective Food Districts compared to previous experiences, a National Register of Food Districts has been introduced at MIPAAF, which should be the primary basis to fill the deep information gap that has characterized them over the years. In this regard, it is the responsibility of each Autonomous Province or Disciplinary Region to autonomously recognize the Food Districts and enter them in the National Register¹⁴⁶.

3.2.2. Piedmont Regional Law 1/2019

The city of Turin, although it has not yet developed a real food policy, is trying to enhance the relationship between the city and the food itself. In this regard, together with the Metropolitan City and the city's public universities, the city of Turin has worked hard over the years to define a Food Agenda in which citizens, economic operators, farmers and artisans are involved and listened, in order to identify the fundamental aspects to be resolved as well as to define the main objectives useful to reach a food policy as soon as possible. This collaboration between the different sectors that make up the city and its surrounding areas, is also supported by a food governance process (Feeding Metropolitan Turin) that deals with collecting, integrating and enhancing the legacy of all local and super-local experiences that have a direct or indirect impact on food. Therefore, taking into account the plurality of actors within the Turin food system, the willingness expressed by the City of Turin and the Metropolitan City is to improve food quality by making it widespread and accessible to all and to allow the food supply of the Turin metropolitan area.

In support of these decisions, the city of Turin is supported by the Regional Law n.1 of 22 January 2019 which is focused on the "*Reorganization of the rules on agriculture and rural development*" addressed primarily to citizens, public bodies, businesses and professionals and the third sector¹⁴⁷. According to what has been reported in the normative text of this law (Article 1), the Region, the European Union and the State cooperate and contribute to the improvement of the sustainable competitiveness of the agricultural, and rural system trying to ensure an effective collaboration and an adequate

¹⁴³ Source: <https://www.politicheagricole.it/flex/cm/pages/ServeBLOB.php/L/IT/IDPagina/14159> - visited on 10th november 2020

¹⁴⁴ Source: <https://www.regione.piemonte.it/web/temi/agricoltura/promozione-qualita/distretti-rurali-agroalimentari-qualita> - visited on 10th november 2020

¹⁴⁵ Source: <http://www.fidaf.it/index.php/i-distretti-del-cibo-novita-e-aspettative/?print=pdf> - visited on 10th november 2020

¹⁴⁶ Source: <https://www.politicheagricole.it/flex/cm/pages/ServeBLOB.php/L/IT/IDPagina/14160> - visited on 10th november 2020

¹⁴⁷ Source: <https://www.regione.piemonte.it/web/temi/agricoltura/lr-12019-riordino-delle-norme-materia-agricoltura-sviluppo-rurale> - visited on 9th november 2020

distribution of added value among the subjects belonging to the agricultural, agro-food and agro-industrial supply chains (Consiglio Regionale del Piemonte, 2019). In order to pursue these important goals, the Region has decided, on the one hand, to implement intervention policies in accordance with the principles of subsidiarity, differentiation, adequacy and simplification while, on the other hand, it promotes the development of integrated tools, with particular reference to the integration of supply chain and the strengthening of the development of tools for the regulation of agricultural and agri-food markets.

However, carefully analyzing the text of this Regional Law, it can be noted that, in addition to the provisions on multifunctional agriculture (Article 17) intended as all those primary activities that perform economic, environmental and social functions, and the provisions on social agriculture (Article 18), there is Title II focused on "*Interventions in agriculture and rural development*". The regional program of interventions (Article 6), of annual duration, is adopted ensuring the participation of economic and social partners and local authorities as well as the identification of what are the strategic objectives. Nonetheless, this program is aimed at ensuring the selection, concentration and coordination of interventions through the use of an integrated approach. Furthermore, in addition to defining what are the objectives to be achieved and the respective instruments of implementation, the regional program provides also an analysis of the agricultural system, agribusiness, agro-industrial and rural which also includes commercial activities, crafts and small tourism (Consiglio Regionale del Piemonte, 2019).

Title IV of the regional law is focused on the "*Valorization of Agriculture*". More precisely, Article 39 is focused on the enhancement of agricultural and agri-food products by specifying, within paragraph 3, how the Region, identifies the "*Food Districts*" in order to combine economic activities with culture, history, tradition and local tourism offer. However, in order to achieve the contents expressed in the article, the Region is responsible for promoting the creation and development of a multifunctional informatics platform, whose main purpose is to create digital archives capable of promoting extensive forms of transparency and enhance the value of agricultural and agri-food products by allowing consumers access to the information they contain (Consiglio Regionale del Piemonte, 2019).

Moreover, a further important aspect of the law 1/2019 that deserves to be analyzed is identified in Articles 43bis and 44. Respectively, the first one, refers "*on Food Education and Consumption Orientation*" by describing the role of the Region in promoting a conscious food consumption towards the population. Furthermore, the guidelines to be followed are identified in order to: *i)* promote the knowledge and consumption of food from regulated production at the centre of which are located agriculture and products of the territory; *ii)* promote knowledge of agriculture, the enhancement of the territory and rural culture and local traditions; *iii)* promote the culture of sustainability and guide food choices, lifestyles and consumption in relation to sustainability, emphasizing the active role of farmers to protect and guard the territories. Article 44, instead, addresses the issues of "*Protection and enhancement of biodiversity of agricultural and food interest*". The Region, according to Law 194/2015 "*Provisions*

*for the protection and enhancement of bio-diversity of agricultural and food interest*¹⁴⁸, promotes actions to enhance biodiversity of agricultural and food interest, with the aim of protect and preserve local genetic resources (Consiglio Regionale del Piemonte, 2019).

Finally, Title V refers to the theme of "*Countering Agri-Food Fraud*". Article 51 states that the Region has the task of establishing a system aimed at combating agri-food fraud and deceptive practices adopted during different stages of the supply chain: production, processing, transport, storage, mediation and marketing of agri-food products. In order to achieve the aims included in the Article 52, the Region uses the Antisofisticazione Agroalimentare Services (AAS) which has been established by the Provinces and the Metropolitan City of Turin. The main goals of this institution can be identified in: *i*) control of compliance with sector regulations; *ii*) collection of samples of agri-food products; *iii*) control of compliance with the measures adopted by the region (Consiglio Regionale del Piemonte, 2019).

3.2.3. Turin: toward a Food Policy

In the North-West of the country, between Milan and the French borders and in the middle of a productive agricultural territory, is located the city of Turin which is also considered as an "*Eating City*" (Bottiglieri, et al., 2016). With a population of 870,000 inhabitants, the city itself occupies the fourth place in the ranking of the largest cities from the point of view of population¹⁴⁹. After being the capital of the Duchy and the Kingdom of Savoy as well as the first Italian capital from 1861 to 1865, in the twentieth century the city grew as a city-state around the huge FIAT factories. However, in recent decades, the city has been the site of a radical transformation both from a physical and symbolic point of view. In particular, this material change has occurred mainly after the Winter Olympic Games hosted in 2006 (Dansero & Pettenati, 2015). By doing so, the city has moved in the collective imagination of Italians from a grey industrial city to a lively tourist city based on creativity, cultural heritage, cinema, museums, innovation and food (Vanolo, 2008).

The City of Turin and the Metropolitan City, together with other local authorities, are promoting a process of creating an urban food policy that is deeply rooted in the civil and institutional fabric of its territory. For this reason, the City of Turin is the first major Italian Municipality to recognize the right to adequate food as a fundamental right to the point of including a specific provision in its Statute (Bottiglieri, et al., 2016). Nevertheless, the really interesting and innovative aspect on which it is worth to reflect and act is the recent awareness from politics and public administration, on the one hand, and from the scientific world, on the other, of the multifunctional character of food and the deep relationships that it has with the city (Dansero, et al., 2014). In this sense, also the city of Turin has begun to think about the food-city relationship as well as the system of "*local food*". Within an open and inclusive process of building the territory as a local territorial food system, capable of critically reflecting and initiating self-organizing and creative processes of re-orientation of the food-city relationship, the world of research

¹⁴⁸ Source: <https://www.normattiva.it/uri-res/N2Ls?urn:nir:stato:legge:2015-12-01;194> – visited on 9th november 2020

¹⁴⁹ Source: <https://www.tuttitalia.it/comuni/popolazione/> - visited on 8th november 2020

(including public universities) has begun to pursue and support several projects and conferences on topics of some interest. In this regard, in October 2015, the University and the Polytechnic of Turin, in collaboration with the University of Gastronomic Sciences of Pollenzo, organized the 7th Conference of the International Network Sustainable Food Planning, whose activities will be structured around the following tracks: *i)* land planning and urban planning; *ii)* governance and private entrepreneurship; *iii)* relevant experiences and practices; *iv)* training and work; *v)* flows and networks¹⁵⁰.

Therefore, if a food policy is desirable, at least on the metropolitan or provincial scale, the ambition that drives the Metropolitan City, in collaboration with the University of Turin, is to build a "*food agenda*", or rather a manifesto characterized by a "*bottom-up approach*", together with citizens, economic operators, farmers, artisans and traders, that allows to bring out the fundamental issues to be resolved and the objectives to be achieved. Hence the idea of "*Nutrire Torino Metropolitana*" (NTM) or "*Feeding Metropolitan Turin*", was born in 2015. NTM can be considered as a process of food governance resulting from the collaboration between the Metropolitan City and the University of Turin. NTM, in fact, deals with collecting, integrating and enhancing the legacy of all local and super-local experiences that have a direct or indirect impact on food (Dansero, et al., 2016).

Nevertheless, NTM was born as a path aimed at building a systemic food strategy, shared and participated. Its first concrete objective is to co-design and implement a Metropolitan Food Agenda that, however, should not only be a document of principles but also a rigid master plan. The idea is to have a map of proposals and themes of action able to provide motivation, knowledge, indications, first project directions towards a concrete objective of food quality, daily, widespread and accessible to all (Dansero, et al., 2016).

¹⁵⁰ Source: http://www.aesotorino2015.it/conference_2015/localizing_urban_food_strategies - visited on 8th november 2020

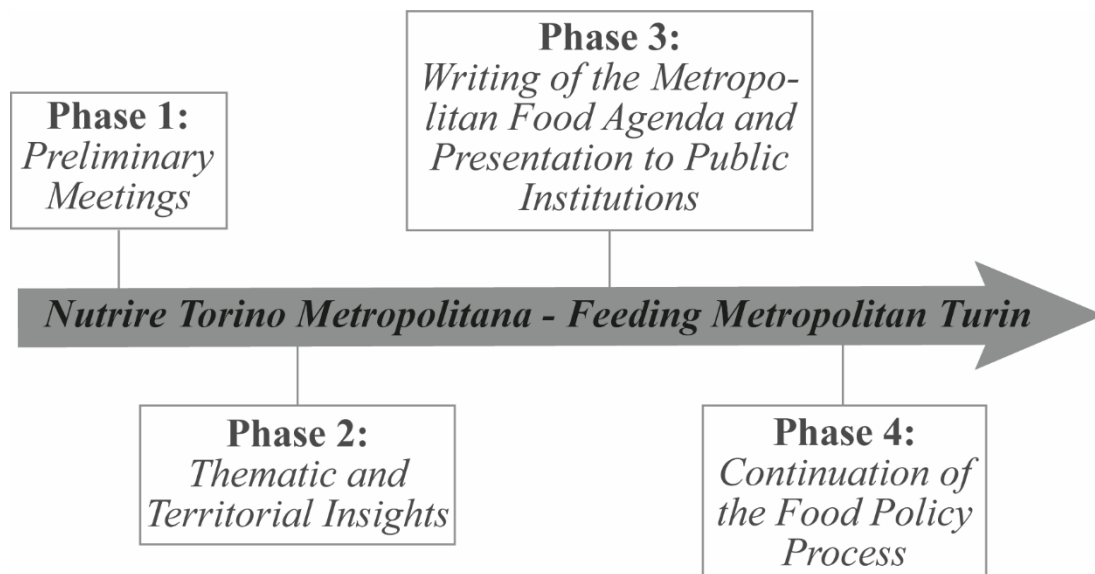


Figure 69 - Main phases of the Nutrire Torino Metropolitana (Feeding Metropolitan Turin). Source: own elaboration from: (Peano & Toldo, 2015)

The first phase of this path has been structured in a cycle of three meetings, according to a logic as inclusive as possible in relation to the objectives to be achieved and the planned activities (Peano & Toldo, 2015).

Tabel 20 - Meetings that characterized the first phase of the initiative "Nutrire Torino Metropolitana". Source: own elaboration from: (Peano & Toldo, 2015)

Development process of the "Nutrire Torino Metropolitana" initiative	
Meetings	Purpose
1 st Meeting	<i>Saw the participation of multiple actors of the food system and served to stimulate interest and reflection on the need for an integrated food policy</i>
2 nd Meeting	<i>Saw the participation of more than one hundred operators of production and distribution in Piedmont, consumers, experts and technicians of the institutions who faced the great challenges imposed by the perspective of cities that "eat" and territories that produce, within a scenario simultaneously global and local. In this meeting, the participants were asked to discuss three main issues: i) improving food quality; ii) supplying the metropolitan area of Turin; iii) widespread and accessible quality</i>
3 rd Meeting	<i>On the other hand, concluded the first phase of the process with the restitution to the participants of the results of the previous days as well as starting a structured comparison for the construction of the metropolitan food policy</i>

Moreover, all participants involved in this process were asked to validate eight working themes to be understood as possible concrete areas of action for the future development of the metropolitan food system (Dansero, et al., 2016). These possible areas of action can be identified in: *i)* education and training; *ii)* information and knowledge; *iii)* distribution and logistics platforms; *iv)* public procurement; *v)* simplification; *vi)* quality awards and incentives; *vii)* territorial planning; *viii)* new forms of governance (Bottiglieri, et al., 2016).

Food Atlas

Food issues and the concept of real food have increasingly become an integral part of the debate on the sustainability of territorial and urban policies. As already stated, the symbolic moment of this process of change is represented by the signing of the Milan Urban Food Policy Pact (MUFPP). Through adherence to the pact, that now counts 210 cities from around the world, urban areas are committed to working to develop sustainable, inclusive, resilient, safe and diverse food systems to ensure healthy and accessible food for all¹⁵¹. Among the many MUFPP member cities, we also find the city of Turin, which has initiated several processes aimed at involving different food actors to develop urban food policies. The project "*Food Atlas of Metropolitan Turin*" is also part of this process. It represents a fundamental element for the creation of a regular system of study and monitoring of the social, economic and cultural dynamics of the Turin food system¹⁵². The project in question aims to produce a systematization of available data on the food system at the scale of the metropolitan city, collecting a repertoire of representations, videos, texts, research, articles, functional to an analysis and representation of the food system¹⁵³. This shows how food, within this project, is approached with a transversal and systemic approach, proving to be flexible to the multiple spatial and thematic dimensions through which it relates to the city and its territory¹⁵⁴. Moreover, the Atlas also aims to respond to other needs, such as that of a structure of connection and stable interaction between the actors of a place (be it material or digital) of participation able to give voice to other weak actors of the system¹⁵⁵.

Tabel 21 - Goals of the Turin's Food Atlas. Source: own elaboration from: <https://www.unisg.it/assets/Scheda-Atlante-Cibo-Torino.pdf>

Turin's Food Atlas	
Goal	Target
Goal 1	Analyze and explain the food-city relationship in the Turin metropolitan system, connecting the existing information
Goal 2	Build the cognitive base from which to elaborate political proposals and projects concrete in the direction of a sustainable food system, identifying actors, resources, flows, spaces, relations, which constitute the system itself
Goal 3	Generate an interdisciplinary reflection, a mapping in a common perspective, that can serve as a tool of analysis and design for possible "food policy" of Turin at the scale subway
Goal 4	To transform the World Fair Expo-2015 legacy into concrete actions, that will develop in the medium-long term

Furthermore, the information collected during the development of the project are gathered within a multimedia platform that will be configured as an atlas whose contents will be accessible and partly interpretable by the community in order to make the tool dynamic and constantly updated. The Food Atlas of Metropolitan Turin, proves to be useful to those who intervene in its regulation and enhancement, to those who investigate the sustainability of territorial food systems, to the actors of the system to create new

¹⁵¹ Source: <https://www.unisg.it/assets/Scheda-Atlante-Cibo-Torino.pdf> - visited on 8th November 2020

¹⁵² Ibid.,

¹⁵³ Source: <http://www.osservatorioresilienza.it/progetti/altre-iniziative/atlane-del-cibo-di-torino-citta-metropolitana> - visited on 8th November 2020

¹⁵⁴ Source: <https://atlantedelcibo.it/atlane/> - visited on 8th November 2020

¹⁵⁵ Source: <https://www.unisg.it/assets/Scheda-Atlante-Cibo-Torino.pdf> - visited on 8th November 2020

relationships or simply to those who are curious to know more about the Turin food system¹⁵⁶.

Tabel 22 - Actors involved in the Turin's Food Atlas. Source: own elaboration from: <https://www.unisg.it/assets/Scheda-Atlante-Cibo-Torino.pdf>

Actors involve in the Food Atlas	
Food Association & Movements	<i>The Atlas is not only seeing as a reservoir of data and information, but also as a possible tool for communication of their activities and exchange with others individuals with similar interests</i>
Individual citizens	<i>Consider the Atlas as a tool useful to learn more about the food system which they belong and to make their voices heard by individuals</i>
Institution of different scales	<i>Municipality, Metropolitan City, Region can use the Atlas as a tool in the processes of elaboration and application of local food policies and as a cognitive database for the elaboration of its own policies aimed at the different elements of the food system</i>
Entrepreneurs	<i>Find in the Atlas an important reference for data and information related to the flows and dynamics of the local food system</i>
World of research	<i>The Atlas represent a point of reference for the increasingly widespread and heated international debate on issues related to the sustainability of territorial food systems</i>

¹⁵⁶ Source: <https://atlantedelcibo.it/atlane/> - visited on 8th november 2020

3.2.4. Milan: the first city in the Italian scenario

In 2015, European Year for Development, the European Commission decided to finance the "Food Smart Cities for Development" project, which actively involved twelve urban areas, located on three different continents, who coordinated their food policy and international cooperation activities until the end of 2016. This project, part of the European programme "*DEAR - Development, Education and Awareness Raising*", aims to promote the role of cities in changing the paradigm of urban food production and consumption¹⁵⁷. Among the many and various initiatives organized within the Food Smart Cities for Development, the most important one is certainly the adoption of the Milan Urban Food Policy Pact (MUFPP) whose primary purpose is to feed cities in a fair and sustainable way. However, the path followed by the city of Milan towards the drafting and definition of the aforementioned Policy Pact, began in July 2014 when the City of Milan and the Cariplo Foundation signed a Memorandum of Understanding.

This Memorandum was aimed to promote and implement a comprehensive strategy on food for the city of Milan called "*Milano Food Policy*". The latter, turns out to be an innovative planning strategy that integrates and implements a food system throughout the city. Moreover, this initiative is based on an integrated cross-sectoral approach between public bodies, social organizations and the private sector¹⁵⁸. Subsequently, in January 2015, an Evaluation of the Milan Food System, which represents a useful analysis to collect, integrate, synthesize and evaluate the interconnections of all the information related to the current situation of food-related policies and actions, was launched. It is also important to highlight how this analysis process allows the restitution of a clear image of the complexity of the urban food system and helps to create the appropriate basis to understand it (Calori & Magarini, 2015). Another key element of the Food Policy of the City of Milan is identified in the consultation process, launched in June 2015, aimed at encouraging the involvement of citizens and key stakeholders in the design and implementation of the measures necessary to improve the quality of the food system of the city of Milan.



Figure 70 - Main contents of the Assessment Milan Food System. Source: own elaboration from: (Calori & Magarini, 2015)

¹⁵⁷ Source: <https://www.milanurbanfoodpolicypact.org/project/> - visited on 5th november 2020

¹⁵⁸ Source: <https://use.metropolis.org/case-studies/the-milan-food-policy#casestudydetail> – visited on 5th november 2020

Furthermore, in October of the same year, once this consultation phase was concluded, the mayor and the city council approved the Milan Food Policy outlining its main objectives (Calori & Magarini, 2015). Thus, in October 2015, the Milan Urban Food Policy Pact (MUFPP) was established, the first international pact on food policies that directly involves cities, through the signature of mayors. Proposed during the C40 Summit in Johannesburg in February 2014 by the ex-mayor of Milan, Giuseppe Pisapia, the MUFPP was finally launched at the end of Expo-2015 entitled "*Feeding the Planet, Energy for Life*" (Dansero, et al., 2017).

Tabel 23 - Main goals of the Milan Food Policy. Source: own elaboration from: (Calori & Magarini, 2015)

Food Policy of Milan	
Field of application	Purpose
Sustainability	<i>Make the food system more fair and sustainable in order to qualify the entire municipality starting from the issues of food and to experiment an innovative way to rule the city</i>
Knowledge	<i>Provide scientific and systematic knowledge on the production and consumption of food in the Milan area</i>
Integrated system	<i>Create a system of political-institutional addresses to integrate all the dimension of the city government that deal with the issue of food</i>
Engagement	<i>Encourage the engagement of citizens and stakeholders in the design and implementation of measures aimed at improving the quality of the food system in Milan</i>
International debate	<i>Contribute to the international debate on the centrality of the city, for the promotion of sustainable development</i>
Strategy	<i>Transform the World Fair Expo-2015 legacy into concrete actions, that will develop in the medium-long term</i>

Nowadays, the MUFPP has been signed by 210 cities around the world¹⁵⁹. While on the one hand, the MUFPP represents a new space of confrontation between cities around the world on issues of food security and food system planning, on the other hand it represents an international framework within which to develop further local applications that meet the needs of each regional context (Bini, et al., 2017).

¹⁵⁹ Source: <https://www.milanurbanfoodpolicypact.org/signatory-cities/> - visited on 5th November 2020

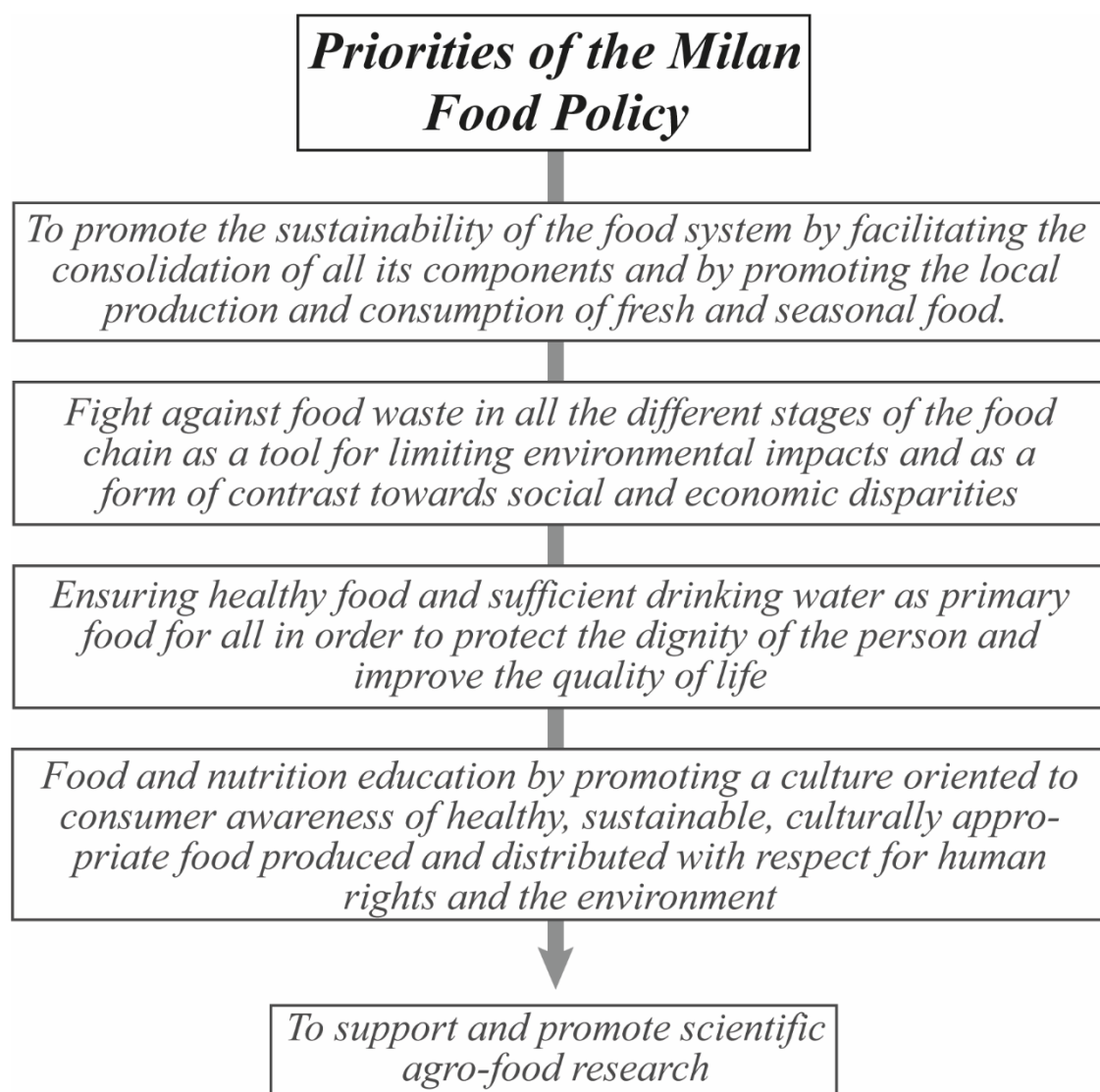


Figure 71 - Priorities of the Milan Food Policy. Source: own elaboration from: (Città di Milano, 2015)

The Milan Urban Food Policy Pact: a participatory approach

In 2014 during the Summit held in Johannesburg, former Mayor of Milan Giuseppe Pisapia proposed, to all mayors of the cities participating in the Summit, the signing of a Pact inherent to urban food policies. Following this proposal, all city representatives from around the world began to collaborate with the Ministry of Foreign Affairs, the European Union and the United Nations. The main purpose of these collaborations was essentially to involve and convince as many urban realities as possible to adhere to this pact. Furthermore, this collaboration officially began in September 2014 when the city of Milan along with forty other cities from around the world began to exchange opinions, experiences and points of view to define the contents of the Pact itself. A year later (2015) in London, the standards and indicators to be included in the protocol were discussed¹⁶⁰.

In parallel to this collaborative process, an advisory group was established, composed of numerous representatives of the most important international organizations (European Commission, Committee of the Regions (EU), FAO, UNHABITAT, World Health

¹⁶⁰ Source: <https://www.milanurbanfoodpolicypact.org/history/> - visited on 6th November 2020

Organization)¹⁶¹ whose main goal was to contribute to a more sustainable, healthy and just future for the entire planet. These organizations, in turn, have provided their valuable input in reviewing the process and aligning it consistently with other relevant international initiatives. In addition, in order to optimally co-ordinate the project, in January 2015 the City of Milan established the Technical Team, a group of experts with strong expertise in food and international issues. This team, was convened to assist the City of Milan in drafting and providing feedback within the Milan Urban Food Policy Pact and Framework for Action¹⁶².

Regarding the governance of MUFPP, it is important to note that the latter is provided by the Executive Committee, on the one hand, and the Assembly of Signatory Cities, on the other. Respectively, the Committee appears to be the representation of MUFPP city members globally, providing strategic oversight to ensure that the mission and mandate of the Covenant is guided by and meets the needs of its members. The Committee consists of 13 members, 12 of whom are voting members, representing each geographic area (*Africa: 2 cities; East Asia: 2 cities; Southeast Asia and Oceania: 2 cities; Europe: 2 cities; Latin America: 2 cities; North America: 2 cities; South and West Asia: 2 cities*). Within this Committee, decisions are taken by simple majority while the work is supported by the Secretariat of the Milan Urban Food Pact, based in the city of Milan. Finally, the work of the Steering Committee is identified in the decision on: *i) partnership; ii) cooperation with networks; iii) sponsorship; iv) members of the MUFPP Award jury; v) internal rules of procedure*¹⁶³.

A further role played by the MUFPP Secretariat is to collaborate with several networks of regional, national and international cities in order to foster the peer-to-peer exchange among signatories cities and to spread the content of the Pact. This collaborative process is called the "*Food Networks' Alliance*" and offers all signatory cities an overview of all possible platforms where they can continue to discuss and work on MUFPP issues. Furthermore, this alliance serves as a hub for sharing information between different city networks. Through the latter, it is possible to spread the virtuous imitation of the best practices; ensure real-time step-by-step technical assistance that naturally emerges among civil servants; support cities both in planning local policies or projects and in their development in a fluid and creative way¹⁶⁴. To stimulate the dissemination and exchange of good practices, the MUFPP Secretariat, together with the Cariplo Foundation, launched in 2016 the first edition of the Milan Pact Award (Bini, et al., 2017) which seeks to be innovative in the way it supports cities' effort to strengthen urban food system and adapt as needs of signatory cities change. The recognition and profile that accompanies the awards for good practices has proven to help catalyze change among the most experienced cities and those that have just started working in the field of food as it relates to other priorities of mayors¹⁶⁵.

¹⁶¹ Source: <https://www.foodpolicymilano.org/advisory-group-ita/> - visited on 6th November 2020

¹⁶² Source: <https://www.foodpolicymilano.org/en/tt-profile/> - visited on 6th November 2020

¹⁶³ Source: <https://www.milanurbanfoodpolicypact.org/governance/> - visited on 6th November 2020

¹⁶⁴ Source: <https://www.milanurbanfoodpolicypact.org/networks/> - visited on 6th November 2020

¹⁶⁵ Source: <https://www.milanurbanfoodpolicypact.org/award/> - visited on 6th November 2020

Milan Food Policy Pact 2015-2020

The MUFPP can be configured as a tool that is simultaneously political, theoretical-methodological and directional, able to connect in a network a growing set of cities in the plurality of experiences and peculiar conditions, encouraging the comparison and exchange of good practices, which represent important tools to be able to innovate the governance of the food system also at the global level, starting from an unprecedented scale in food policies such as the urban one (Dansero, et al., 2017). For this reason, the Milan Food Policy Pact 2015-2020, promoted by the City Council of Milan and Fondazione Cariplo, can be understood as a tool useful to support city government, in order to make the city more sustainable starting from food issues (City Council of Milan, 2015). Improving the quality and sustainability of the Milan's food system, means increasing the overall sustainability of the city itself. Therefore, this process should start from the needs of the people living there and the social issues related to food such as respective accessibility, quality and origin (Comune di Milano & Cariplo, 2014). In doing so, the Municipality of Milan decided to commit to making its food system more equitable and sustainable by adopting its own Food Policy and Strategy capable of indicating the guidelines to be followed from 2015 to the present. However, as anticipated above, the path followed by Milan for the adoption of the Food Policy began in June 2014. This path is articulated in four stages¹⁶⁶:

- 1) *Analysis of the strengths and weaknesses of the Milanese food system*
- 2) *Development of Food Policy objectives through public consultations*
- 3) *Adoption of the Food Policy by city institutions*
- 4) *Development of pilot projects*

¹⁶⁶ Source: <https://www.comune.milano.it/documents/20126/55016547/Delibera.pdf/85d6bc5b-77c4-2c03-c264-4ba7267cdda1?t=1575964978432> - visited on 6th november 2020

CONCLUSION

In the twenty-first century, hunger is still one of the most urgent development challenges and hunger eradication remains a key commitment of decision-makers at all levels. In this thesis, I have attempted to offer a detailed analysis of how the challenge of hunger eradication has changed over time, leading me to question the role of food in our society. The process that led to the recognition of the right to food as a fundamental human right was long and tortuous. At the level of the international community, the adoption of the Universal Declaration of Human Rights (UDHR) in 1948 and the International Covenant on Economics, Social and Cultural Rights (ICESCR) in 1966 were milestones in this process: both documents clearly affirmed the importance and the willingness to guarantee globally the right to an adequate standard of living and the fundamental right to be free from hunger. But if the recognition of these rights has been a long process, even more complex has been their implementation, in order to see them guaranteed to every human being.

Two additional challenges have impacted and inevitably conditioned the work of decision-makers at all levels: the process of urbanization on one hand, and the one of globalization on the other. Indeed, if we take into account the latest work published by the United Nations on these topics, we see that the numbers speak for themselves: according to the 2019 World Population Prospects the world's population will continue to increase reaching 8.5 billion in 2030 and 9.7 billion in 2050, while the World Urbanization Prospects - The 2018 Revision tells us that by 2050 68% of the world's population is projected to be urban. I wondered how these processes influenced and impacted, on one hand, the way we eat and, on the other hand, the development of multi-level policies to see the right to food guaranteed for every individual. It is evident that, although these two processes run parallel to each other, they are at the same time closely related and the consequences produced on food systems and the way we eat are, most of the time, the cause of both of these processes.

To mention a few of the consequences that have been analyzed in this paper, these processes have led to a slow and inevitable mechanisation of the production system; have strongly impacted on both the rural and urban environment, giving rise, to give an example, to migratory phenomena; but have also affected people's eating habits, very often with consequences for our health. Multinational food corporations have gained a foothold, coming to dominate, and alter, the entire food chain by initiating a standardization of highly processed products, making them more attractive, economically, aesthetically and in terms of taste. As a consequence, farmers and local producers have found themselves unable to compete with the new giants of the food industry, the so-called Big Foods. In very short, the process of urbanization and globalization has impacted, both locally and globally, on the way food is produced, distributed and consumed, raising significant questions about the environmental, economic and social sustainability of the food chain.

While the challenge of hunger eradication was initially foreign to the planning process, it has become evident in this scenario that our work as urban planners must take this situation into account. The relationship between spatial planning and food planning

has therefore inevitably changed over the years, demonstrating the need to coexist and collaborate in order to meet the food needs of a growing and increasingly urban global population, while pursuing the principles of social, environmental and economic sustainability. I therefore decided to carry out a literature review process in order to investigate the methodologies through which a planning process for sustainable food systems is initiated. I then looked at the different levels of action, starting with the international context, and then looking at the European and Italian contexts. Finally, I analyzed some relevant European projects and case studies that have been carried out on specific territories.

Starting with the international context, what has emerged from my analysis is that the international community, specifically in the legal person of the United Nations (UN), and together with the European Union (EU), has played a key role in outlining a legal and regulatory framework within which to move, consisting of directives, objectives, goals and guidelines. In this regard, these two entities have expressed a strong interest and willingness to support and guide this shift towards a more sustainable scenario that could better respond to the food needs. In particular, in this thesis, I have reported on two documents that are most relevant to the topic at hand: the 2030 Agenda for Sustainable Development, adopted in 2015, which outlines the 17 Sustainable Development Goals (SDGs) the second of which is “Zero hunger”; and the New Urban Agenda (NUA), adopted in 2016 in Quito, in which it is firmly stated that, if well-planned and well-managed, urbanization can be a powerful tool for sustainable development for both developing and developed countries. By meticulously analyzing these documents, I was able to understand how complementary and closely related they are and how a process of urban, suburban and rural planning for sustainable development must inevitably take the food issue into account.

A second important consideration I have made is that the international and the European community, in outlining a legal and regulatory framework within which to move, cannot and is not able to take into account the specificities of the territories and, therefore, directives, objectives, goals and guidelines are better applied by local governments. Indeed, although the directives designed by the UN and the EU are all the same, the implementation and organization of these, and thus also food planning, differs from country to country, and from city to city. The reasons for this diversity can be many and varied. At the same time, however, the infinite local realities, without common leadership, would not be able to provide a comprehensive framework to guide and chart a sustainable urbanization process worldwide. Moreover, although each reality has its own peculiarities, I think that it is important to exchange knowledge, to compare the solutions adopted in different cities in order to circulate virtuous practices that can perhaps be replicated or adapted in other contexts.

For this reason, in the second part of the thesis I turned my gaze to the local context, trying to understand how the guidelines and objectives given by that international and the European community have been transposed by the territories and municipalities. I immediately realized that cities have gained a decisive and central role in carrying out urban policies and that there is a clear will to initiate transition processes. To this end, I identified and analyzed ten European projects in order to understand how spatial planning and food planning were managed and related to each other to achieve the given goals. Of

these, one in particular caught my interest because I think it was the one that most successfully combined the two spheres mentioned above. I am talking about the project of Agromere, carried out in the city of Almere, 30 km east of Amsterdam.

The objective of Agromere, a planning concept for an area situated in the rapidly growing Dutch city of Almere, was to explore opportunities to re-integrate agriculture into modern Dutch city life. For the first time recently, urban agriculture was the driving force behind the city's development. But one of the most interesting aspects that emerges from this European project is represented by its bottom-up approach with which it was developed. Indeed, the active involvement of different stakeholders has undoubtedly facilitated the achievement of the final goal. This allowed me to understand that, in every context in which the opportunity to intervene arises, it is appropriate to consider that the needs of individuals and urban-territorial dynamics undoubtedly influence the decision-making phase of the planning process. In this process, for example, it was seen as essential that all key stakeholders participated right from the beginning and fully contributed to the final results. It is therefore necessary to have the presence, the role and the support of many different actors, representing the different instances of citizenship. For this reason, the stakeholders involved in the Agromere process were representatives of local farmers, the city councils of Almere and Zeewolde, the province of Flevoland, nature and environmental organizations, the board of small and medium-size businesses of Almere, the Ministry of Agriculture and commercial city developers. Seven visionary points, which I have reported here in the thesis, have been elaborated for sustainable urban development and, because all stakeholders were involved from the beginning, they remained fully committed throughout the design process. In parallel, Agromere project required careful, solid and energetic management. And so a well-designed regulatory structure capable of conveying and indicating the guidelines to be followed was necessary. Thus, it is clear that the presence of Urban Plans, Food Plans, Food Atlas, Urban Policies and Food Strategies is extremely important to organize, regulate and give a structure to the requests coming from this multi-stakeholders process. Normally, city development would force farmers to move, but the Agromere concept shows the opportunities offered by urban agriculture, and how the farms could be adapted in order to stay in the region and maintain their agricultural activities. Moreover, to produce food and food-products within the city has made it possible to reduce the (mental and physical) distance between the city, and its citizens, and the countryside, and its farmers and producers.

Beyond the specific case of Agromere, on which I intended to say a few words for its innovative capacity, from the analysis of these projects it is possible to observe that in our modern world, urban food production is receiving increasing attention once again both in developing and developed cities worldwide. Indeed, cities are classified as "*deliberative spaces*" in which food governance systems take shape and are shaped according to the needs of the cities themselves. However, due to the specificities and peculiarities of the places I mentioned above, the process and methodologies through which urban planning is approached are different, although it is very often possible to outline commonalities. One point in common with many realities, for example, is the fact that several actors are involved in the decision-making process and that they play a central and active role. Which and how they are involved differs, however, from place to place.

In order to better analyze this aspect, I have considered four case studies, looking at four different cities: the metropolises of London and Vancouver, and the Italian cities of Turin and Milan. The choice of studying the Canadian context of Vancouver and the English context of London, stems from the fact that, over the years, these two cities have earned the title of "*pioneer cities*" in terms of the recognition and integration of food issues within urban planning agendas. I then chose to look at Milan because it was the first Italian city to be involved in the definition of food policies: in 2015, following the *Expo - "Feeding the Planet, Energy for Life"*, the Milan Urban Food Policy Pact (MUFPP) took shape, enabling the city of Milan to be seen as a leading city in the process of defining food policies. Many cities in Italy and around the world have emulated the process, including Turin, my hometown, to which I have therefore decided to look. Although the food planning process is still evolving, the Piedmontese capital has never ceased to show enthusiasm for making food a political priority, thanks to the fact that a food culture has never been lacking in our region.

Notwithstanding, as mentioned above, these are very different realities, all have shown a desire to initiate a process of transformation towards more sustainable and resilient paradigms for urban food policies. However, the way in which local actors were called upon to participate in the deliberative process differed. In London, for example, the Mayor initially focused on two neighbourhoods of the city (Croydon and Lambeth) in order to involve and raise awareness of the effects of their food choices, encourage people to grow their own food, and improve the quality of food available to the community. In the Canadian context, on the other hand, the bottom-up approach can be seen above all in the definition of the Vancouver Food Charter, in which one can perceive how the city's commitment to defining a food policy is strongly based on the ideas and needs expressed by the population. A final important aspect that emerges from the comparison between these different realities refers to the territorial scale of application of the planning process. In fact, London and, to some extent, Milan show that they have concentrated exclusively on the local and city scale. The exact opposite happened in Vancouver where the local administration, supported by Metro Vancouver, decided to adopt a systemic approach expanding its scale of intervention, and thus considering not only the local and city scale, but also the regional scale. In doing so, they have been more successful in developing a link between areas of consumption and areas where food is produced.

In concluding my present work, I would like to end on a positive and hopeful note because I am convinced that, albeit unevenly and slowly, food is returning to occupy the space it deserves in our societies, trying to contribute to a paradigm shift that now more than ever, with a global pandemic advancing, seems necessary to me. The alternatives are there and some of them are really very interesting: let's look at them to plan the future.

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