

# How does Barcelona feed itself?

Diagnosis of Barcelona's food system  
Executive Summary



# Contents

---

<b>1 Introduction</b>	<b>04</b>
How does Barcelona feed itself?	04
<b>2 Diagnosis of Barcelona's food system by sector</b>	<b>06</b>
Food production	08
Food transformation	12
Imports, distribution and logistics	14
Marketing and supply areas, and consumer habits	17
Food waste and loss	20
Research, training and dissemination of the agri-food sector and agroecological promotion	22
<b>3 Diagnosis of Barcelona's food system by strategic area</b>	<b>24</b>
Food governance	26
Healthy and sustainable diets	28
Food justice and poverty: inequalities and right to food	31
Food production: agroecology promotion and revitalisation towards sustainable production	32
Agri-food supply, commercialisation and distribution	34
Food waste and loss	37
Climate emergency	38
	40
<b>4 Final reflections</b>	

# 1 Introduction

## How does Barcelona feed itself?



The “How does Barcelona feed itself?” report is a description of the current state of the city's food system. “How does Barcelona feed itself?” has been promoted by the Commissioner for Social Economy, Local Development and Food Policy, as part of the Barcelona World Capital of Sustainable Food 2021 project.

The report aims to examine and understand how the city feeds itself, based on an analysis of the structures and mechanisms that condition the practices associated with the agri-food system while establishing a reference point in order to identify priority areas for action and define future strategies.

This study has been carried out from the perspective of developing sustainable, inclusive, resilient, safe and diversified food systems, in accordance with our commitments as signatories of the Milan Urban Food Policy Pact and as members of the Metropolitan Region Food Pact, together with other local stakeholders. For this reason, throughout the diagnosis, special relevance is given to the analysis of networks, projects and structures that focus on attaining transformative, fairer, healthier and more sustainable food. These initiatives are of central importance for attaining more participative food systems that tackle the power inequalities that are currently inherent in the dominant food system.

After an introduction that places the City of Barcelona in context, in terms of its population, territory, economy and society, the report's focus and methodological framework are described. The report is then divided into two main sections.

The first section analyses how Barcelona feeds itself, from a systemic perspective that includes six sectors or components: a) production; b) food transformation and processing; c) importing, distribution and logistics; d) commercialisation and mass catering spaces, and consumer habits or patterns; e) food loss and waste, use and recycling and f) agri-food research, training and promotion.

The second section is structured around political intervention, analysing what actions have been carried out while also presenting shortcomings, in terms of interventions carried out in order to contribute, with elements and data, to designing a future food strategy for the City of Barcelona, with a horizon of 2030. In order to do so, the analysis of Barcelona's food system is based on the six thematic fields established in the Milan Urban Food Policy Pact: a) governance, b) sustainable diets, c) social and economic equity, d) food production, e) food supply and distribution, and f) food loss and waste. A seventh cross-cutting thematic area has been added to these six, which refers to the role played by food systems in the climate emergency. It should be noted that these strategic areas are not isolated, because in order to carry out the necessary changes for a transition to sustainable food, they must be worked on in a comprehensive or systemic fashion.

Lastly, the appendices include a document produced by Pep Bantulà Pañella, in collaboration with Barcelona City Council's Area of Food Policy and the coordinating office of the World Capital of Sustainable Food, which introduces the local government's strategy in recent years in terms of food policies. Subsequently, we present a map of stakeholders and a map of the city's food infrastructures, which show the wide variety and complexity of the social stakeholders involved in the city's food system. In this regard, it is crucial to understand and make full use of the actions and interconnections between the various sectors, activities and stakeholders, in order to promote truly transformative changes.

This executive summary presents the main conclusions for both the first and second sections, structured according to the sections making up the report.

## 2 Diagnosis of Barcelona's food system by sector

Food production  
Food transformation  
Imports, distribution and logistics  
Marketing and supply areas, and consumer habits  
Food waste and loss  
Research, training and dissemination of the agri-food sector  
and agroecological promotion



# Food production

- **Barcelona is a densely populated city:** 81% of its land has been urbanised, while its woodland mosaic accounts for 17% and its agricultural land 0.7% <sup>1</sup>.
- Urban pressure has accelerated **strong competition** for rural and fragmented urban and peri-urban agricultural areas. The loss of agricultural land in Barcelona's Metropolitan Area from 1956 to 2018 caused an 80.5% decrease in the surface area used for cultivation (21,796.45 hectares)<sup>2</sup>. The agricultural area in the province of Barcelona shrank by 42% during the same period<sup>3</sup>.

**As for Barcelona's surrounding area, vegetable crops are the cultivation par excellence by the sea.**

- As for Barcelona's surrounding area, **vegetable crops are the cultivation par excellence** by the sea, in the south of Baix Llobregat and in the north of the Maresme, providing work for 2,650 employees<sup>4</sup>.
- **The agricultural parks in the Metropolitan Region** (the Baix Llobregat Agricultural Park, the Gallecs Site of Natural Interest, the Sabadell Agricultural Park, the Montserrat Rural Park and the Pla de Palou Agricultural Area in Granollers), with strong local and commercial support, guarantee a small part of the city of Barcelona's supply needs for fruit and vegetables and products with added value.
- **Protection for agricultural land** has become a key factor for preserving agriculture in a peri-urban environment surrounded by densely populated areas. 45% of the Baix Llobregat Agricultural Park's land is held through ownership while the rest is leased. In the area around the park, generational handover is on the increase, linked to the inclusion of young farmers who have an agroecological approach to agriculture. The Baix Llobregat Agricultural Park only provides 16% of food self-sufficiency in local fruit and vegetables for Barcelona's Metropolitan Region<sup>5</sup>.

<sup>1</sup> SIGPAC, 2019

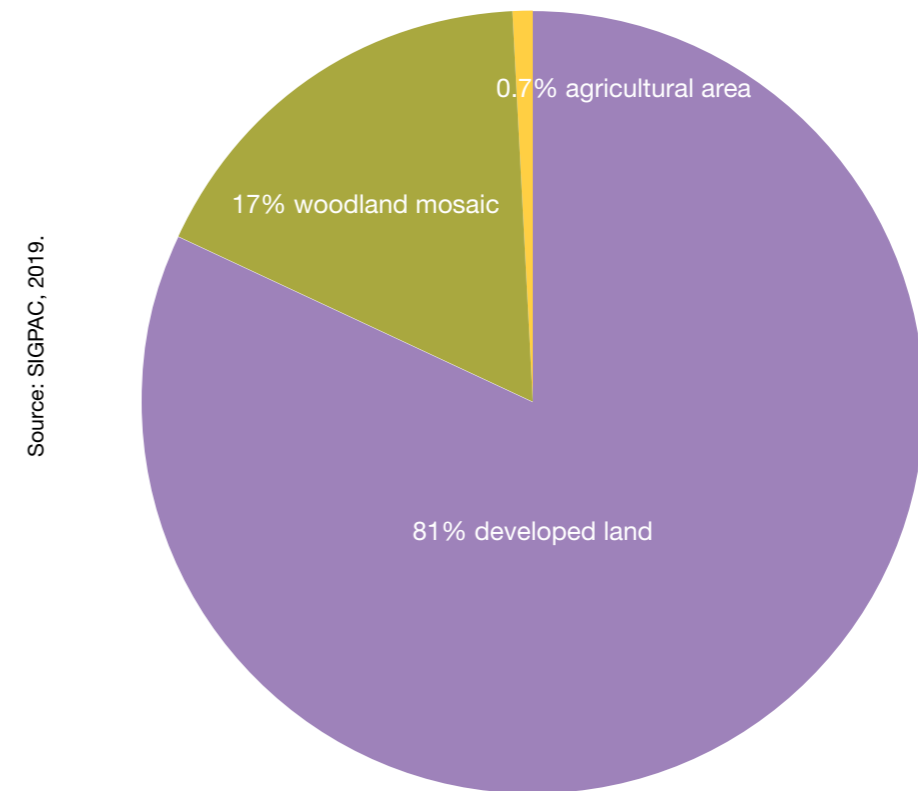
<sup>2</sup> <https://gisportal.diba.cat/portal/apps/storymaps/stories/25d1fe92ec134006a9743e89e6f8a330>

<sup>3</sup> <https://www.diba.cat/es/web/bcn-smart-rural/-/les-comarques-barcelonines-han-perdut-el-42-de-les-terres-de-conreu-des-dels-anys-cinquanta>

<sup>4</sup> PABLL: <https://parcs.diba.cat/web/baixllobregat/normativa>, Maresme: [https://www.ccmarsme.cat/wp-content/uploads/2020/05/Sector\\_primari\\_\\_web.pdf](https://www.ccmarsme.cat/wp-content/uploads/2020/05/Sector_primari__web.pdf)

<sup>5</sup> Callau et al., 2017.

## Land uses in Barcelona



Source: SIGPAC, 2019.

- 6.4% of the surface area of the **Collserola Nature Park** is agricultural, where organic agriculture is fostered and traditional varieties used.
- In 2019, in the City of Barcelona, **2,191 beneficiaries of CAP subsidies** received a total of €13.3 million<sup>6</sup>. The beneficiaries of these agricultural subsidies are nearly all institutions, companies and land owners, who are registered as residents in the City of Barcelona. However, 8 out of every 10 beneficiaries of this aid received under €5,000.
- In the City of Barcelona, **fishing activities** are carried out by the Confraria de Pescadors<sup>7</sup> [Fishermen's Cooperative], which has 38 boats (circling or encompassing nets are the most used methods in the port), providing jobs for around three hundred people. The most sustainable fishing techniques, using alternative fishing gear, are only used by a minority in the Barcelona Fishermen's Association. Fishing has been in decline for years, with generational handover being problematic. These data are especially relevant, given that the Mediterranean is the most overfished sea in the world<sup>8</sup>.
- The **Catalan agro-ecological production sector** is experiencing continual growth in terms of cultivation, livestock and companies involved in agri-food transformation and commercialisation (and services). In Catalonia, 7% of cultivated land is used for organic production<sup>9</sup>. In regard to turnover, 41.6% of Catalan production is sold in Catalonia, 21.8% is sold in Spain, while 36.5% is exported, either to other EU countries (23.8%) or to third countries (12.8%)<sup>10</sup>.

<sup>6</sup> European Agricultural Guarantee Fund, 2020  
[www.fega.es](http://www.fega.es)

<sup>7</sup> <https://www.cpbarna.com/pesca/>

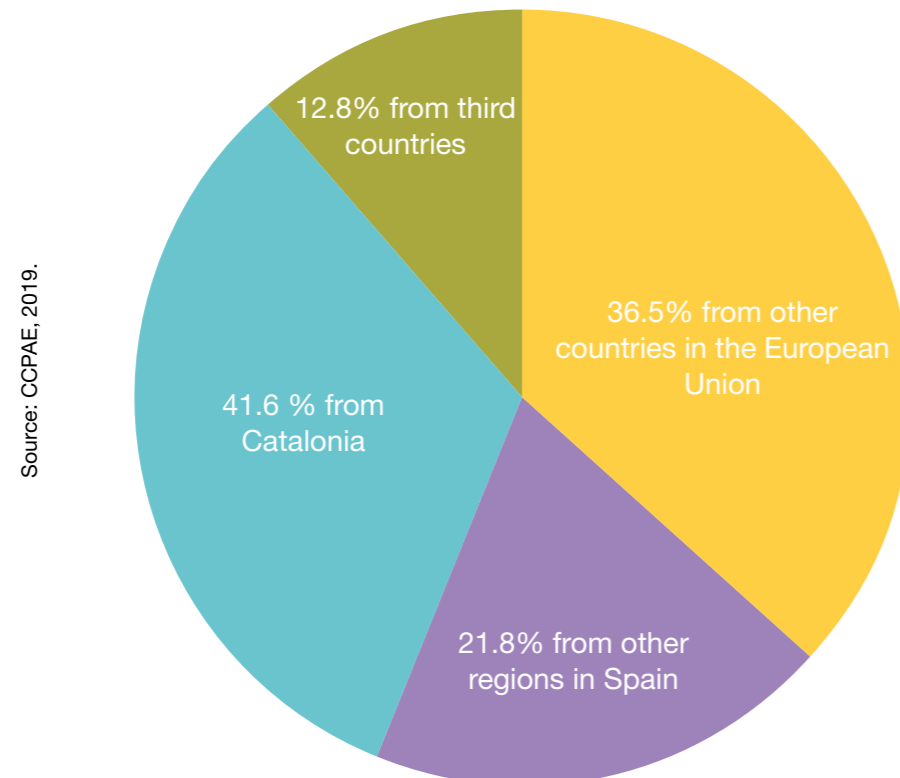
<sup>8</sup> [http://agricultura.gencat.cat/web/.content/08-pesca/politica-maritima/enllacos-documents/fitxers-binari/ESTRATEGIA-MARITIMA-2030-Pla-2018-2021\\_CATALA.pdf](http://agricultura.gencat.cat/web/.content/08-pesca/politica-maritima/enllacos-documents/fitxers-binari/ESTRATEGIA-MARITIMA-2030-Pla-2018-2021_CATALA.pdf)

<sup>9</sup> <https://gisportal.diba.cat/portal/apps/storymaps/stories/d39e3f64faff44db9c48ad8217c7fa52/>

<sup>10</sup> CCPAE, 2019 and [http://www.ccpae.org/index.php?option=com\\_content&task=view&id=1419&Itemid=196&lang=ca\\_ES#.YLeadyYp5H4](http://www.ccpae.org/index.php?option=com_content&task=view&id=1419&Itemid=196&lang=ca_ES#.YLeadyYp5H4)

- Over the last two decades **in the Province of Barcelona, the amount of land used for ecological crops** has grown exponentially, from 2,764 ha in the year 2000 to 45,055 ha in 2020<sup>11</sup>. The number of producers, manufacturers and marketers of ecological produce has grown in parallel, along with the volume of activities (storage, produce transformation, packaging, labelling, meat packing and distributors).
- **In the municipality of Barcelona, the land dedicated to eco-agriculture**, 3.83 hectares, would have been insignificant had it not represented 88.9% of all the city's crops. According to the latest statistics from the CCPAE<sup>12</sup>, some registers certify an increase in agricultural land with various uses (vineyards, citrus fruits and fallow land). Ecological livestock farming is also present, while not being very significant, notably poultry (laying hens) and cattle for meat.
- In terms of **self-sufficiency**, Barcelona is one of the Catalan municipalities with the least capacity for supplying its citizens with locally produced food. This is explained by a lack of cultivated land (4.31 ha) and its high population density (21.6% of Catalonia's population). Meanwhile the Province of Barcelona's degree of self-sufficiency in fruit and vegetables is 15%<sup>13</sup>.
- **Urban agriculture** has increased both in surface area and the number of users. In the City of Barcelona, it is estimated that there are 119 urban allotments linked to 40 associations that organise activities with the participation of city residents, along with over 300 school vegetable gardens. Furthermore, there are various municipal agricultural properties: AgroVallbona (agro-ecological project in the district of Nou Barris, with two properties (La Ponderosa and Granja Ritz), Can Calopa, Can Carlets and Can Soler near Collserola. Barcelona is a densely populated city: 81% of its land has been urbanised, while its woodland mosaic accounts for 17% and its agricultural land 0.7%

### Sales of Catalan organic production



<sup>11</sup> [http://www.ccpae.org/docs/estadistiques/2020/03\\_2020\\_superficie.pdf](http://www.ccpae.org/docs/estadistiques/2020/03_2020_superficie.pdf)  
<sup>12</sup> Databases of land area used for eco-agriculture registered on 30-12-2020: [http://www.ccpae.org/index.php?option=com\\_content&task=view&id=400&Itemid=232&lang=ca\\_ES#.YLfJLqgzaUk](http://www.ccpae.org/index.php?option=com_content&task=view&id=400&Itemid=232&lang=ca_ES#.YLfJLqgzaUk)  
<sup>13</sup> <https://gisportal.diba.cat/portal/apps/storymaps/stories/25d1fe92ec134006a9743e89e6f8a330>

# Food transformation

- The city of Barcelona presents **strong diversification** in agri-food transformation, with almost 300 enterprises<sup>14</sup>. It is where 3% of Catalonia's agri-food enterprises have their headquarters. The companies based in Barcelona are notable for their business volume. It should be noted, however, that most of their production plants are not located in the city but in the metropolitan area.
- The most important agri-food industries registered in the City of Barcelona, above all the others in Catalonia, are those concerned with the **production and conservation of fish, crustaceans and molluscs**, linked to the activity of the Port of Barcelona and the Mercabarna Fish Market (34 establishments, 12.1% of Catalan companies). In terms of volume, these are followed by bakeries and industries that manufacture pasta (20 companies, 7% of the Catalan total) and those that prepare and conserve fruit and vegetables (59 companies, with 6.1% of the Catalan total). Meat-packers should also be mentioned, with 113 industrial establishments (4.5% of the Catalan total)<sup>15</sup>.
- **Mercabarna houses transformation companies** that carry out high-tech processes. They specialise in the handling, conservation or ripening of fresh produce, logistic services, such as refrigeration, transport or laboratories, or purchase control for large food-distribution chains.

<sup>14</sup> ([https://ajuntament.barcelona.cat/estadistica/catala/Estadistiques\\_per\\_temes/Treball\\_i\\_teixit\\_productiu/Teixit\\_productiu/DIRCE/evo/t25.htm](https://ajuntament.barcelona.cat/estadistica/catala/Estadistiques_per_temes/Treball_i_teixit_productiu/Teixit_productiu/DIRCE/evo/t25.htm)). In any event, statistics from the DARP (2020) have been used as a reference, given that they are broken down by sector.

<sup>15</sup> Agri-food industries listed in DARP's RIACC register (2020).



# Imports, distribution and logistics

- Mercabarna and the Port of Barcelona are the **main food logistic infrastructures in Catalonia**.
- The **Port of Barcelona** is one of the main logistics centres in Europe and is regarded as one of the driving forces of Catalonia's economy. Agri-food produce makes up 21% of all port traffic (2019). Soya, from Brazil (soybean) and from Argentina (soy flour), is one of the most handled products in the Port.
- **Mercabarna** is one of the main wholesale markets in Europe and sells over two million tonnes of fresh produce every year (fruit, vegetables, fish, shellfish and meat products), along with flowers and plants. Its area of influence reaches beyond Catalonia to the rest of Spain, the Mediterranean area (especially the South of France and the North of Italy) and even a number of Central and Northern European countries.

## **Mercabarna and the Port of Barcelona are the main food logistic infrastructures in Catalonia.**

- Approximately 31% of **Mercabarna's sales** go to municipal markets and traditional commerce; 30% goes to export; 23% to supermarkets and organised distribution; 11% to the Hospitality, Restaurant and Catering channel (Horeca) and 5% to wholesalers outside of Mercabarna.
- In regard to the fruit and vegetable sector, 70% of the **produce marketed in Mercabarna's Central Fruit and Vegetable Market in 2020** came from Spain (12.9% of which originated in Catalonia), while the remaining 30% was imported. 10.6% of the fruit came from Catalonia, 19% from the Valencia Region and 22% from the Canary Islands (mostly bananas). 15% of the vegetables came from Catalonia, while 29% was grown in Andalusia and 26% in France.
- In **Mercabarna's Central Fish Market**, 8% of the fresh fish came from Catalonia and 42% from the rest of Spain, while 21% originated in other EU countries (especially France) and 29% from non-EU countries. The lower proportion of locally-caught fish in the total number of tonnes sold is relevant. There has been a significant decline in recent years, as a consequence of reduced catches in the Mediterranean. 76% of fresh shellfish came from Spain, mostly from Galicia. 16% of the shellfish came from Catalonia.

- **There is no specific data about the destination of Mercabarna produce** beyond general data concerning the type of customer and general percentages concerning the volume of exports.
- **Mercabarna houses direct sales stalls for 12 metropolitan agricultural cooperatives** (mainly from Baix Llobregat and the Maresme) as well as for individual farmers. The sales volume for these two areas (cooperatives and markees) is an extremely small proportion of the total amount with regard to the number of tonnes sold in the Central Market in 2020, which was 1,149,700 tonnes. More specifically, they represent 0.20% and 0.05% of total sales, respectively.
- **Mercabarna also has a sales and distribution area for ecological food (Biomarket)**, which is the first eco-agriculture wholesale market in Spain and the second in Europe. It mainly sells fruit and vegetables. With a surface area of 8,900 m<sup>2</sup>, it has 21 wholesale stalls and 10 stalls for small-scale local producers.
- **The Farmers' Union has been working in collaboration with Barcelona City Council to develop a project, CIAP-Terra Pagesa**, which will probably be launched in the Biomarket, a logistics centre for receiving and preparing orders, to facilitate the direct sale of local produce for the retail and catering sectors.
- **Food distribution and logistics** in the metropolitan environment is becoming increasingly centred **around private logistics centres** that belong to, or work for, the main business groups (supermarket chains)<sup>16</sup>.

<sup>16</sup> Alimarket, 2020



# Marketing and supply areas and consumer habits

- In Barcelona, there are a **lot of food marketing channels**. Sales volumes are dominated by supermarkets, municipal markets and neighbourhood shops and, to a much smaller extent, farmers' markets, cooperatives and consumer groups.
- According to the latest consumer survey<sup>17</sup>, in 2020, 63.7% of **food purchases** were made in supermarkets or hypermarkets, 16,2% in specialist or neighbourhood shops and 14% in municipal markets. In regard to fresh food, purchases are spread out among the 3 main sales channels: municipal markets (32.3%), neighbourhood or specialist shops (31.9%) and supermarkets/hypermarkets (31.6%)<sup>18</sup>. In the case of fish, traditional fishmongers are the establishment rated the highest by consumers, although 65% prefer buying their fish from supermarkets<sup>19</sup>.
- Four **business groups** owned 47.9% of food retail establishments in Barcelona at the end of 2019.<sup>20</sup>
- **Municipal markets are vital infrastructures for Barcelona's food system**. They have a total of 2,148 establishments, most of which sell fresh food, they employ around 8,000 people and generate an economic impact of €1.1 billion<sup>21</sup>. However, in recent years, they have suffered a decline in both the number of stalls and the number of customers, who prefer to shop in supermarkets and specialist establishments.
- **Retail food shops** account for 12.8% of the total in the city's commercial census<sup>22</sup>. A fifth of them are concentrated in the Eixample district. 67.8% of the city's retail food shops are to be found in the districts of L'Eixample, Ciutat Vella, Sant Martí, Sarrià - Sant Gervasi and Gràcia.

<sup>17</sup> Barcelona City Council's 2020 Òmnibus Survey.

<sup>18</sup> Barcelona City Council's 2020 Òmnibus Survey.

<sup>19</sup> AECOC and Mercabarna, 2019.

<sup>20</sup> Alimarket, 2020.

<sup>21</sup> Barcelona City Council, 2006d.

<sup>22</sup> Barcelona City Council, 2019c.



- Although all city neighbourhoods have a commercial offer of food, **the territorial distribution of food commerce reveals differences** in volume, diversity and types, between districts and especially between neighbourhoods. These differences are especially visible on the outskirts of the city, where the number of commercial establishments and services is lower. More specifically, shortages are detected in the neighbourhoods of La Clota and Sant Genís dels Agudells in the district of Horta-Guinardó.
- **The unequal distribution of shops with ecological food**, which represent 5.9% of the total number of food shops in the city, is even more marked<sup>23</sup>. While there is a positive correlation between the wealthier neighbourhoods and shops selling organic food products, these data are not uniformly distributed. Distinct forms of behaviour are observed as a result of awareness in issues such as health or the environment, which have nothing to do with purchasing power.
- There are seven **farmers' markets** organised by various city organisations every week-end. Rural markets and gatherings of producers and consumers are organised in the Metropolitan Area, especially in the Baix Llobregat Agricultural Park.
- **Consumer cooperatives**, inspired by the precedent of workers' consumer cooperatives, are food facilities with a long history in Barcelona. In 2018, the city's 57 agro-ecological cooperatives or consumer groups supplied around 1,420 households<sup>24</sup>. The opening of the FoodCoop Cooperative Supermarket aims to expand the range of the agroecological and cooperative commercial offer with sustainable, organic and local products.
- **Produce defined as local** (especially fruit and vegetables, eggs, meat, milk) are acquired by supermarkets, neighbourhood shops and municipal markets, almost without distinction. By contrast, organic products (eggs, fruit and vegetables) are mainly purchased in neighbourhood shops (40.1%), although supermarkets have recently begun to acquire greater market share<sup>25</sup>.
- Shopping is a task mainly done by **women** of all age groups, but it is worth highlighting the over-65 age group.
- 56.5% of the people interviewed in the Òmnibus 2021 Survey affirmed that they are trying to **reduce their consumption of meat** and, what's more, 6.1% say they are vegetarians or vegans (a percentage that increases notably in people under the age of 35 and in women)<sup>26</sup>.
- As for **mass catering**, Barcelona has a large number of bars and restaurants, although this was one of the sectors hardest hit by Covid-19. In 2019 there were 11,155 registered bars and restaurants<sup>27</sup> in the city, while in June 2020, this figure had fallen to 9,300 (5,500 of which had terraces)<sup>28</sup>. These were mostly independent businesses (90.3%), while the remaining 9.7% belonged to a chain (the overwhelming majority belonged to one of the 30 main catering chains)<sup>29</sup>.
- Over 68% of the **city's restaurants** are focused on Mediterranean or local cuisine, while 30% are thematic or specialised cuisines (mainly Italian, followed by Chinese, Japanese, Arab and American)<sup>30</sup>.

<sup>23</sup> Garcia et al., 2020.

<sup>24</sup> Espelt, 2018.

<sup>25</sup> <https://ajuntament.barcelona.cat/mercats/ca/noticia/mzss-productes-de-proximitat-i-ecolozegics-als-mercats-de-barcelona>

<sup>26</sup> Barcelona City Council's 2021 Òmnibus Survey.

<sup>27</sup> Barcelona City Council, 2019c.

<sup>28</sup> [https://ajuntament.barcelona.cat/comerc/ca/noticies/barcelona-ampliara-lespai-public-per-a-la-restauracio-i-el-comerc\\_946006](https://ajuntament.barcelona.cat/comerc/ca/noticies/barcelona-ampliara-lespai-public-per-a-la-restauracio-i-el-comerc_946006)

<sup>29</sup> RBD Consulting Group, 2017.

<sup>30</sup> RBD Consulting Group, 2017.

- The Slow Food association publishes a guide of **Barcelona's "Slow Food" establishments**<sup>31</sup>, listing over 100 restaurants that link local food culture to sustainability. The city also has the Barcelona Restaurants Sostenibles association, which provides training and raises awareness in the catering sector in aspects concerning sustainability<sup>32</sup>.
- All **108 of the city's municipal nursery schools** have their own kitchens, where they put together daily menus based on a Mediterranean diet, according to age group, using mainly ecological food, much of which is locally sourced. They also take specific dietary needs into account (intolerances, allergies, vegetarian diet, etc.). At Barcelona nursery schools, no pork or pork products, nor fish such as perch or halibut are consumed.
- Three quarters of **state schools** have a dining room service, and most of them have their own kitchens. 58 dining-room management establishments have received the go-ahead from the Barcelona Public Health Agency to apply the recommendations for a healthy diet with more fresh fruit and vegetable proteins in their meals.
- 90% of schools do not offer any **vegetable protein** as the second course every week<sup>33</sup>.
- Part of Barcelona's population are unable to access enough quality food to maintain an adequate diet. In 2016, in the City of Barcelona, 8.6% of households suffered some form of **food insecurity**, while 4% suffered from a high level of food insecurity. Single-parent families present higher levels of food insecurity (14.6%), along with the most disadvantaged social classes (24.8%). The Ciutat Vella district has the highest level of food insecurity (23.1%), followed by Nou Barris (17.3%)<sup>34</sup>.
- Meanwhile, the **proportion of childhood obesity** in the city of Barcelona is 7% among children aged 3 to 4, 12.7% among children aged 8 to 9 and 6.5% among teenagers. In all age groups, obesity is more frequent among children and teenagers from lower-income districts<sup>35</sup>.
- There are 13 **soup kitchens** in Barcelona, mostly belonging to foundations or parishes. The city's Banc dels Aliments, the first food bank to open in Spain, saw a 30% rise in the volume of food it distributed during the Covid-19 crisis, compared to the previous year<sup>36</sup>.

**All 108 of the city's municipal nursery schools have their own kitchen, where they put together daily menus based on a Mediterranean diet, using mainly ecological food, much of which is locally sourced.**

- There are also **various community initiatives**, such as food networks, which collect food in establishments and then distribute it among people who need it, who also take part in the organisation. Sometimes, the food is cooked before being distributed. Alterbanc was launched in July 2020.
- There are various **social and neighbourhood initiatives** that have appeared **under agro-ecological and solidarity criteria**, which prioritise the fight against hunger and food waste.

<sup>31</sup> <https://slowfood.barcelona/index.php/bcn-slow-food-guide/slow-food-planet>

<sup>32</sup> <https://www.bcnostenible.cat/es/web/punt/barcelona-restaurants-sostenibles>

<sup>33</sup> Ramos et al., 2020.

<sup>34</sup> Bartoll et al., 2018.

<sup>35</sup> Bartoll et al., 2018.

<sup>36</sup> <https://www.bancdelsaliments.org/>

# Food waste and loss

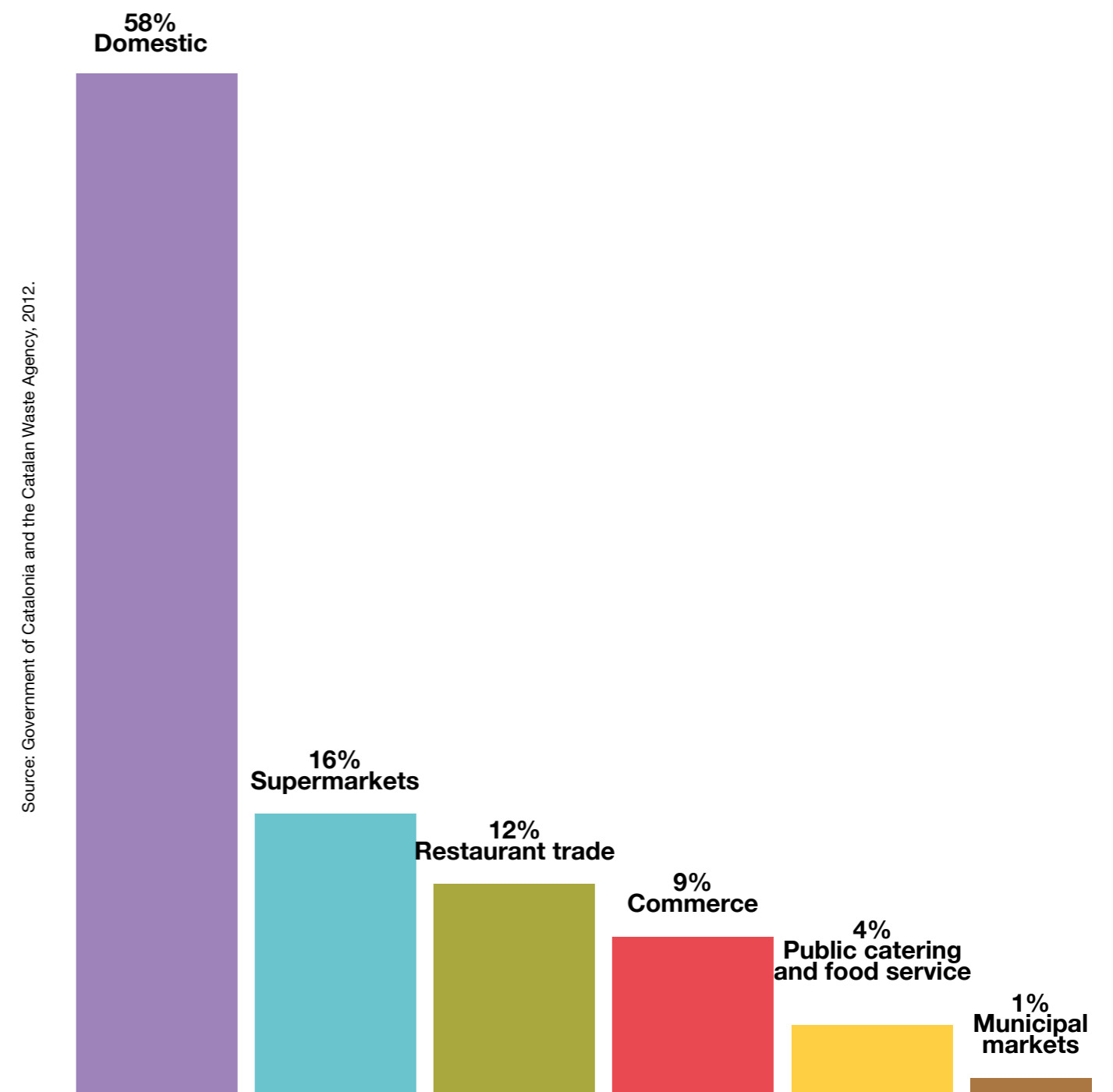
- As for food **waste in Catalonia**, it was estimated in 2012 — based on organic matter in municipal waste, and therefore without taking account of losses in the areas of production and distribution— that such waste from families, retail shops and restaurants came to 262,000 tonnes per year, some 34.9 kg per person per year (equivalent to 7% of the products purchased). This figure represents a cost of 112 per person per year.
- 58% of the **food wasted** in Catalonia occurs in the domestic sphere, 16% is wasted in supermarkets, while the catering sector accounts for 12%. 9% of the loss is attributed to the commerce sector and 4% to public catering and restaurant services, while municipal markets account for only 1% of the city's food waste<sup>37</sup>.
- **There is no data for food waste in the City of Barcelona.** Based on the Barcelona Escoles + Sostenibles [More Sustainable Schools] programme, with 34 schools taking part, about 5% of food is estimated to be wasted in schools<sup>38</sup>.
- The **Espigoladors Foundation**, which has its central workshop in El Prat de Llobregat, is raising awareness of this problem by fighting for proper food use, guaranteeing the right to a healthy diet and creating job opportunities for groups at risk of social exclusion<sup>39</sup>.

<sup>37</sup> Government of Catalonia and the Catalan Waste Agency, 2012.

<sup>38</sup> <https://www.barcelona.cat/barcelonasostenible/ca/escoles-sostenibles/tags/page/ens-ho-mengem-tot>

<sup>39</sup> <https://espigoladors.cat/ca/>

## Food waste in Catalonia



# Research, training and dissemination of the agri-food sector and agroecological promotion

- **Five universities** (UAB, UB, UPC, UPF and UVic) offer **bachelor's degree**, masters and postgraduate courses covering branches of agricultural and agri-food sciences, as well as other studies linked to agriculture and food. There are also training courses in agroecology, ecological production and rural environment and skills acquisition in agricultural schools (Manresa) and secondary schools (in Malgrat de Mar, Manresa, Castellar del Vallès and Prat de Llobregat).
- Barcelona and its Metropolitan Area have **prestigious research centres linked to agriculture and food**. Five of them are connected to the Government of Catalonia's Institute of Agri-food Research and Technology (IRTA). They are the IRTA in Cabrils, Torre Marimón in Caldes de Montbui, the Agri-genomic Research Centre, (CRAG-UB), the Agri-food Economy and Development Research Centre (CREDA) in the UPC campus in Castelldefels and the Animal Health Research Centre (CRESA) at the UAB. The UB has its Torribera Food Campus in Santa Coloma de Gramenet and the Institute of Nutrition and Food Safety Research (INSA). The Miquel Agustí Foundation is affiliated with the UPC, and carries out agrodiversity research and transference.

**Barcelona and its Metropolitan Area have prestigious research centres linked to agriculture and food.**

- There are three **advanced cookery schools** in the City of Barcelona: CETT, the Sant Ignasi School of Hospitality Management and Tourism and the Barcelona School of Hospitality Management.
- **Plant protection associations** in the metropolitan area are providing specialised technical advice to farmers, especially on allotments, with the aim of reducing uncertainty and vulnerability to risks in agricultural activities.
- In recent years, a large number of **cooperatives and organisations** that work in the field of research, design and training in the area of **local agroecology promotion have appeared**.
- The city holds **three big promotional events** for the food and gastronomy sector: the Alimentària Food Fair, the Gastronomic Forum and BioCultura.



---

# 3 Diagnosis of Barcelona's food system by strategic areas

---

- Food governance
- Healthy and sustainable diets
- Food justice and poverty: inequalities and right to food
- Food production: agroecology promotion and revitalisation towards sustainable production
- Agri-food supply, commercialisation and distribution
- Food waste and loss
- Climate emergency



# Food governance

- **A number of social organisations and movements have been working in Barcelona for several decades to implement public food policies and to carry out projects within the framework of food sovereignty.** These initiatives have been maintained over time, although they have had ups and downs in terms of the number of initiatives and the level of coordination between them. Decisive support is needed to strengthen them in a context where the city's food system — what is eaten, how, where and when — is strongly influenced by players not aligned with the right to food or sustainable food and, at the same time, decisions on the food system have been individualised and limited to the area of consumption.
- **Sustainable food policies are becoming increasingly relevant and central in the political agenda.** In spite of jurisdictional limitations and a lack of tradition in developing agri-food policies with the comprehensive vision that cities have, municipalities are becoming important levers for change for promoting more sustainable food systems, underscoring their central role in society with proposals that opt for the relocation, greening and democratisation of food systems. Meanwhile, food systems cross municipal limits and generate territorial interdependencies, and therefore, a perspective and coordination on various levels is required.

## **Sustainable food policies are becoming increasingly relevant and central in the political agenda.**

- Barcelona City Council began to promote various plans and projects - tentatively at first but more firmly after signing the Milan Pact in 2015 - to foster food policies with other players (e.g. through the Metropolitan Region Food Charter). **In 2021, in light of the World Capital of Sustainable Food project, the City Council has activated a process of coordination among City Council areas in this field, involving between 80 and 90 actions and projects, including a series of 10 to 15 mid and long-term strategic projects.** Even so, there will be a need over the coming years to strengthen this coordination work, given how weak it was until 2020, and establish a new, ambitious strategy for promoting food policies that has more resources and sets out an action plan and clear means of implementing and evaluating the policies. In November 2021, the City Council will begin the process of drafting a 2030 City Strategy, in a participative way, which will serve as a framework for this future consolidation.

- **It is essential that governance areas are generated** which ensure the co-production of these policies, and that a shared co-governance body is provided.
- Similarly, it is necessary **to ensure the effective participation of the various sectors and groups**, especially those that are most vulnerable and least visible. It is important to include the perspectives of class, gender and ethnic origin in the analysis and design of public policies and in implementing the actions.
- **The perspective adopted by Barcelona City Council in the last two years has mainly been that of sustainable food.** This fact, governed by the 2021 World Capital of Sustainable Food project, contrasts with other concepts that are more often used in the context of Catalonia by some social movements and organisations that work in agroecology or within the framework of food sovereignty, concepts that have a more established political definition. It is important to work on defining concepts and strategic alignment.

# Healthy and sustainable diets

- **In Catalonia, the current problem in people's eating habits is more to do with food quality rather than a lack of food.** In fact, the WHO considers that, in industrialised countries, the prevalence of some illnesses related to food and associated with the excessive consumption of kilocalories or of certain foods, as well as more sedentary lifestyles, has increased dramatically in recent decades, and Barcelona has followed that trend.

**In Catalonia, the current problem in people's eating habits is more to do with food quality rather than a lack of food.**

- **Barcelona has seen not just an increase in sedentary lifestyles over the last few years**, caused by changes in types of work and leisure, but also a reduction in the consumption of fruit, vegetables and cereals and a rise in the consumption of foods that are processed and high in saturated fats, sugar and salt<sup>40</sup>. It has been shown that adolescents (86%) consume an excessive amount of soft drinks and that there is an extremely high non-compliance in all age groups with the recommended daily amount of fruit and vegetables (91.5% of children aged 3 to 4, 77% of children aged 8 to 9 and 93.4% of adolescents consume fewer than 5 pieces of fruit and/or vegetables a day). A progressive gradient in terms of the ratio between age and the use of fast-food establishments has also been detected. It is teenagers who consume fast food the most (between 30% and 40% do so regularly)<sup>41</sup>.
- According to the Barcelona Public Health Agency, **children and adolescents eat an excessive amount of meat**. Only 20% of children comply with the official recommendations on meat consumption<sup>42</sup>. In Catalonia, meat consumption is around 47.7 kg per person per year<sup>43</sup>, 66.4% above the recommended figure (16 kg per person per year) in terms of nutrition and planetary health<sup>44</sup>, and necessary in order to reduce food's contribution to greenhouse-gas emissions, with the aim of reversing the current climate emergency.

<sup>40</sup> Calzada and the Healthy Food and Physical Activity Group, 2018.

<sup>41</sup> Bartoll et al., 2018.

<sup>42</sup> Ariza et al., 2019

<sup>43</sup> DARP, 2019.

<sup>44</sup> The Good Food Declaration (C40, 2019).

<sup>45</sup> Calzada and the Healthy Food and Physical Activity Group, 2018.

- There has been an increase over the years in **food marketing** that promotes the consumption of cheap, high-calorie products with low nutritional value, aimed especially at children and teenagers<sup>45</sup>. This could be a possible area of action for the municipal government.
- Note too that **this impact on health is, above all, having a disproportionate effect** on the most vulnerable people. They are made worse by the climate emergency, poverty, inequalities, poor sanitation and the prevailing disconnection between food production and consumption.
- In spite of this, **the connection made between health and sustainable food** by public administrations and other social stakeholders that have traditionally worked on Barcelona's agri-food policies has not yet had much effect. This explicit connection, represented by concepts such as One Health and "Planetary Health Diets", is an opportunity to make progress towards transforming the food system.



# Food justice and poverty: inequalities and right to food

- 4% of Barcelona's population suffer from high **levels of food insecurity**, while 8.6% suffer from some type of food insecurity, according to the 2016-2017 Health Survey. The data should be monitored continually, in order to observe its evolution over time, especially in the context of the current economic crisis, caused by Covid-19.
- In Barcelona today, the **right to food** is addressed on various fronts. This results in a fragmented map in terms of both stakeholders and the subsidies and services provided.
- Note too that there are **numerous initiatives in the city working to ensure the right to food**. The city also has a document available, prepared through participation from social and municipal organisations working in the field of food with people with food needs – the Citizen Agreement for an Inclusive Barcelona (2017) – which establishes criteria and strategies for ensuring the right to adequate food in Barcelona. We need to continue supporting it decisively. The document includes aspects such as food availability and accessibility and adequacy, sustainability of initiatives and participation from the people involved.





# Food production: Agro-ecological promotion and revitalisation towards sustainable forms of production

- The lack of agricultural land in the city and the impetus of organised social movements have **fostered public policies for conserving and protecting metropolitan agricultural areas** (Parc Agrari del Baix Llobregat, Espai d'Interès Natural de Gallecs, Parc Agrari de Sabadell, Parc Rural del Montserrat and Espai Agrari del Pla de Palou in Granollers). These areas are strengthening local agriculture and food (organic, in some cases). It is essential to ensure the continuity of these agricultural areas, improve the protection of agricultural land in the city and promote eco-agricultural production. The importance of territorial planning on a metropolitan scale is clear, in order to showcase these agricultural areas as key food production land for the future.
- Given the stiff competition for land use and the limited capacity of local governments to promote agricultural activity, **metropolitan planning should take into account and integrate the amount of available agricultural land** (currently one of the lowest in the EU) in order to ensure access to sufficient, nutritious, high-quality food. Among others, the Catalan Strategic Food Plan and the cooperation agreement between stakeholders in the agri-food system called for by the 2030 Agenda's SDGs, which are listed in the European Green Deal, affirm this.
- In terms of territorial planning, it would be **possible to increase the amount of land under cultivation in the metropolitan area** by allocating it for use as market gardens or orchards<sup>46</sup>, thus doubling the per capita amount of agricultural land, which is currently less than 20 m<sup>2</sup>. Just to ensure supply of locally produced fruit and vegetables, five times more agricultural land would be needed in the metropolitan area.
- **The City of Barcelona is one of the Catalan municipalities with the least capacity to feed its citizens** (land needed to satisfy food demand) **with local produce**. For some time, various organisations have been demanding the application of an agricultural contract that provides economic compensation for ecosystemic services arising from farming activities, and which permits controlled grazing.

<sup>46</sup> Giocoli, 2015.



- **In the last two years, the promotion and revitalisation of ecological production has increased** to 15.6% in the Province of Barcelona and 7% in Catalonia<sup>47</sup>, but it is still far from the European target of 25% of cultivated land, set by the EU for 2030. It is necessary to promote and facilitate eco-agricultural production and promote local ecological consumption.
- **Over the last twenty years, the amount of land used for ecological cultivation has grown exponentially** everywhere and the number of stakeholders (producers, manufacturers and marketers of ecological produce) has increased in parallel along with the volume of activities (warehouses, product transformation, packaging, labelling, meat-packing rooms and distributors). Most of these companies are based in the Province of Barcelona<sup>49</sup>.
- As for **urban agriculture**, there are allotments of various types (community, social, school, municipal and individual)<sup>50</sup>. They are undoubtedly places for education and awareness-raising about agriculture on a local scale and, although they do not produce significant amounts, they are important for promoting environmental awareness linked to agriculture and food, healthy living and social integration<sup>51</sup>.

<sup>47</sup> Barcelona Provincial Council, 2021: <https://gisportal.diba.cat/portal/apps/storymaps/stories/d39e3f64faff44db9c48ad8217c7fa52/>

<sup>48</sup> [https://ec.europa.eu/commission/presscorner/detail/en/qanda\\_21\\_1277](https://ec.europa.eu/commission/presscorner/detail/en/qanda_21_1277)

<sup>49</sup> CCPAE, 2020.

<sup>50</sup> IERMB, 2016 Metropolitan Agriculture.

<sup>51</sup> Calvet-Mir, 2017

# Agri-food supply, commercialisation and distribution

- On a municipal scale, we ought to state the **difficulties in intervening** (given the reduced local food functions and powers) in food supply and distribution, which these days is carried out by just a handful of enterprises that dominate and organise the agri-food market under the protection of public policies on various levels. In any event, it is important for us to take into account that the local authority plays a key role in some key food infrastructures (Mercabarna, municipal markets, collective catering, among other things), which could become real vectors for sustainable food.
- **Mercabarna is a strategic agri-food supply and distribution centre** which goes beyond the scope of Catalonia. It has two main objectives: it is where a large part of the processing and treatment of agricultural production from abroad takes place (most of which will return to the international market), and it supplies the city with food through distribution channels, logistics centres, municipal markets, neighbourhood catering and shops.

**Prioritising local and organic food should be a focus of public policies and social institutions in the city.**

- **The public food infrastructure and cross-cutting local public policies are essential** for strengthening the heterogeneous, resilient retail commerce that provides social values and support for farmers, for reorganising and bringing together the food sectors of neighbourhoods that are far away from the main hubs and for providing incentives for direct social and solidarity consumption through association structures (consumer cooperatives and groups, farmers' markets and other neighbourhood initiatives).
- **There are no studies with data on the presence of local, ecological food in the city's** municipal markets, in order to monitor and follow up on their presence. The little available data indicates very little presence of ecological produce, while it is completely absent in some markets. In terms of produce originating in Catalonia, the data shows a greater presence, and in more markets, but there is still room for improvement. The type of food with the greatest proportion of produce from Catalonia is fruit and vegetables.
- **Prioritising local and ecological food** should be the objective of public policies and the city's social institutions, in order to make sustainable food more available through the city's municipal markets, hospitals, schools, universities and private organisations, among others.



# Food waste and loss

- **There are no up-to-date data on the extent of food waste and loss** in the city of Barcelona as a whole, nor are there any data available on key sectors in the city such as healthcare, education, the Horeca channel, etc. This lack of municipal and sectoral data on food waste makes it difficult to follow and monitor the commitments to reduce food waste by 50%, undertaken in The Good Food Declaration(2019) for tackling the climate emergency.
- As a positive aspect, it must be taken into account that **Act 3/2020 on preventing food waste and loss was recently approved** (March 2020) and that, at the same time, society is increasingly aware of questions such as food loss. Without losing sight of individual responsibility, it is necessary to continue implementing actions that place emphasis on structural aspects of the food system which generate food waste and loss, in order to tackle them through public policies.



# Climate emergency

- **In the mid-term, the climate emergency will speed up various changes** affecting food safety, access to, and the supply and distribution of food. Catalonia is one of the geographical areas where the impact of the climate crisis will be felt most.
- **The food system is responsible for between 21 and 37% of global greenhouse-gas emissions**<sup>52</sup>. The food system of a city such as Barcelona is responsible for over 13% of its emissions<sup>53</sup>.

**The food system is responsible for between 21 and 37% of global greenhouse-gas emissions.**

- The Catalan agri-food sector is extremely vulnerable **to the climate crisis**.
- The consumption of meat and eggs accounts for the **highest volume of food emissions** in all EU countries (an average of 56% of food emissions), followed by dairy products (an average of 27% of food emissions)<sup>54</sup>. In coming years, it will be necessary for **all administrations and social institutions to implement more incisive strategies and actions** in order to reverse some food habits and to move us culturally towards a diet rich in vegetable protein and reduce our consumption of meat, especially industrially produced meat.
- 89% of Barcelona's residents state they are very or quite **concerned about the climate emergency**; 80% believe it may affect their everyday lives; 84% are prepared to adopt changes and purchase local food produce to help to reduce the climate emergency's negative impact; and finally, 65% are in favour of reducing meat consumption<sup>55</sup>.

<sup>52</sup> IPCC, 2019.

<sup>53</sup> That 13% only takes into account emissions arising exclusively from the consumption of food (C40 et al., 2019).

<sup>54</sup> Sandström et al., 2018.

<sup>55</sup> <https://ajuntament.barcelona.cat/premsa/2019/12/27/el-89-de-la-ciudadania-de-barcelona-es-declara-preocupada-pel-canvi-climatic/>

- Through the international initiative **The Good Food Declaration** and the international commitment from cities through **The Barcelona Challenge for Good Food and Climate**, Barcelona City Council has pledged to reduce greenhouse-gas emissions linked to the food system by 2030, encouraging the adoption of Planetary Health Diets, especially in the area of public procurement, and a 50% reduction in food waste. It is important to detail the strategy used for achieving this and/or to showcase the monitoring mechanisms of the declaration that can indicate the degree to which these commitments are being met.
- In Europe, **transportation** between food production and sales is responsible for around 6% of all greenhouse-gas emissions linked to food produce<sup>56</sup>. Giving priority to locally produced food would also help to reduce those emissions.
- As a food hub, **Mercabarna** is also a major source of greenhouse-gas emissions, due to its energy consumption in transport and refrigeration. It could implement a pilot programme to reduce those greenhouse-gas emissions.
- **Organic production** uses more sustainable and environmentally friendly agricultural techniques and practices, which are not just a source of mitigation (avoiding emissions from chemically synthesised fertilisers) but also tools for improving adaptations to the climate emergency, through improvements to soil structures and the promotion of local varieties. Depending on the crop and because of the Mediterranean context, the cut in emissions produced by organic production may represent 100% of emissions (olive trees), 60% (citrus trees), 42% (cereals) or 32% (horticultural)<sup>57</sup>. It is important to highlight the contributions of ecological agriculture in the fight against the climate emergency. It is also important to opt for ecological food, especially when produced locally, with policies and projects that support and facilitate its production, preparation, distribution and commercialisation, as well as promoting its consumption by the population as a whole.

<sup>56</sup> Sandström et al., 2018.

<sup>57</sup> Aguilera et al., 2019.

# 4 Final reflections

The food system is currently one of the main challenges facing the world. As described in this diagnosis, the food system connects many territories, sectors and stakeholders. It is precisely these interactions which must help us make progress towards more sustainable, fairer and healthier food, for people, the planet and territories. The transformation of our food is not just aimed at promoting individual dietary changes, but also at bringing about the conditions in the various sectors (economic, health, environment, social and political), activities (production, transformation, logistics and distribution, mass catering, sale, consumption, use and elimination) and levels of action (individual, community, local, regional, national and international) which enable the transformation of this complex system without leaving anyone behind.

It is important for us to understand and make the most of the interconnections between the various sectors, activities and stakeholders, in order to create sustainable food, as well as recognising the unique features and interdependencies between regions. Consequently, in the process of developing and implementing sustainable food policies, it is vital to cooperate with various territories (e.g. in the City of Barcelona, it is essential to think in terms of the Metropolitan Region in order to coordinate policies and improve the impact of the actions).

At the same time, it is crucial to forge alliances between various social stakeholders, ensure the effective participation of various groups, in the belief that people have the capacity to make decisions about their own food system, paying special attention to the most vulnerable and invisible groups, and to identify levers for change and launch singular, effective actions in terms of food sovereignty.



**How does Barcelona  
feed itself?**

**Executive summary**

**This is a summary of  
“How does Barcelona  
feed itself?”, which  
can be found at  
the following site:  
alimentaciosostenible.  
barcelona**

**November 2021**

