



Barcelona
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Food Capital
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Sustainable Food

A Manual for Cities





Sustainable Food

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Foreword

The food system is at the heart of the greatest challenges –particularly climate, environmental, social and health emergencies– currently facing the world. The Covid-19 crisis has called into question the status quo of the hyperglobalised world we live in, changed our priorities and highlighted the fragility of our economic and food systems, the interdependence between human societies and the rest of nature, social and personal vulnerabilities, and the critical importance of becoming more resilient.

Although the source of the virus has not yet been fully confirmed by the scientific community, everything suggests that it is related to the food system. In fact, Covid-19 has taught us some important lessons about food systems. Firstly, industrial agriculture and livestock production are aggravating the loss of habitats for other species everywhere on the planet. This is in turn creating conditions that heighten the risks of new zoonotic diseases, which are those that, like Covid-19, are transmitted from animals to humans. Secondly, although Covid-19 has not resulted in general food supply problems, the movement restrictions made necessary by the pandemic have given rise to a number of disturbances that are testing the resilience of local, regional and global food supply chains with global consequences. These disturbances have revealed many vulnerabilities underlying the entire food chain and have highlighted job insecurity in this sector. As has happened with other essential services workers, those who work in the agricultural and food sector have proven to be the unwilling main actors in the pandemic, taking great health risks to continue to maintain the flow of food for the whole population. Thirdly, the effects of the economic crisis that is already starting to unfold include a worryingly significant increase in food poverty and inequality, particularly among the female population.



In 2021, Barcelona will be the World Sustainable Food Capital and will host the Milan Urban Food Policy Pact Annual Gathering and Mayors' Summit. This is part of the city's serious commitment to making Barcelona a leader and a driver of this process in collaboration with other global cities. Throughout next year, the city will carry out a number of projects and events focusing on sustainable food. Putting sustainable food at the forefront means giving priority to those elements that are most basic to society, nurturing local relationships, highlighting, appreciating and prioritising community action, care and health; fostering a more environmentally friendly society, rebuilding relationships between urban and rural contexts, society and the primary sector; transforming and regenerating human activities so that they can continue on a finite planet; and with the need to generate social and environmental resilience in the medium and long term.

Covid-19 will stay with us for some time, with variable presence and intensity, and is likely not to be the last emergency of this century. It is therefore crucial that we develop and improve processes, tools and partnerships that nurture resilience and can respond to the potential global risks and emergency situations of the future, such as those linked to the climate crisis, in an adequate, rapid and effective manner. It is crucial that we promote food systems that are fair, healthy, sustainable and resilient.

The aim of this handbook is to provide an accessible definition of sustainable food and clearly identify concrete actions to guide the various social actors of the agrifood system so that they can implement this transformation agenda from the point of view of cities and with the aim of being useful and being applied to

decisions and policy-making. The handbook is divided into three parts: the first one addresses the need to transform our agrifood system and cities' role in it; the second defines the concept of sustainable food and explains the nine areas of action covered by it; and the third provides a detailed description of each of these nine areas of action in relation to the problems addressed by it.

We were in no doubt from day one that we wanted to go hand in hand with science and the scientific community to become the world capital of sustainable food and work towards a sustainable food model. Barcelona City Council would therefore like to thank Ana Moragues Faus, the renowned urban food policy expert at the University of Barcelona who is responsible for the preparation of this handbook.

Barcelona, June 2020

Amaranta Herrero Cabrejas,

strategic coordinator of the project Barcelona, 2021 World Sustainable Food Capital

Why we need to transform our food system: the role of cities

In Barcelona, a city with a population of 1.6 million people, over five million meals are prepared and eaten every day. Of these, almost a third will end up in the bin. Feeding cities is made possible by a complex and global system that includes all the activities relating to food production, processing, distribution, sale and consumption, as well as waste management. **However, our contemporary food system is incapable of feeding us adequately, and it is also generating multiple negative impacts for both people and the planet.**

Food is key to people's health. One in four people in the world die because of an inadequate diet.¹ In other words, these deaths are preventable. Around 3 billion people suffer from malnutrition. Of these, over 820 million go hungry, a number that is on the rise.² At the global level, 21.9% of children suffer from delayed growth due to their diet, while obesity and excess weight levels have reached record figures, affecting 38.9% of the adult population.³ This percentage has been increasing in Barcelona, with 46.3% of the population affected in 2016.⁴ Obesity and excess weight are more prevalent amongst people in precarious socio-economic situations. For example, this condition affects 65.2% of Barcelona's men in the lowest income threshold, as well as 70.2% of its female residents with a low level of formal education.⁴ It is estimated that the direct cost of treating excess weight in Spain adds up to €1.95 billion per year and, if this upward trend continues, it is forecast to rise by 440 million per year.⁵ In addition, being overweight increases the likelihood of suffering from other illnesses, such as cardiovascular conditions or cancer, significantly affecting our quality of life and putting increased pressure on our public health system.⁶ It is estimated that one in every five euros invested in public health in Spain is used for treating illnesses resulting, among other factors, from an inadequate diet.⁷ These illnesses are closely linked to poverty. For example, 14% of people in the Barcelona Metropolitan Area cannot afford a balanced diet.⁸ Current predictions on the impact of Covid-19 indicate that food poverty will most likely continue to increase.



At the same time, **the food system is vital to our economy.** Barcelona Metropolitan Area residents spend over €8.5 billion a year on food, a quarter of which is consumed outside their homes.⁸ The agrifood industry is Europe's largest sector and the driver of Catalonia's industry, as it accounts for 11.9% of its GDP, primarily through small and medium-sized businesses.⁹ In Spain, 14.1% of workers are employed in the agricultural sector and related services, industry, transport and the distribution of agrifood products.¹⁰ In addition, the

restaurant industry employs over 197,000 people in Catalonia, accounting for about 6% of the employed population.¹¹ However, the economic benefits of the food system are disproportionately concentrated on specific stages of the supply chain, at the expense of others, such as the farming sector or small businesses. A significant portion of jobs in the agrifood chain are precarious and unstable, and they involve long hours and low wages, examples range from waiters to food riders or fruit pickers.¹² The UN Special Rapporteur on extreme poverty recently described the living conditions of Huelva's strawberry pickers as worse than those of some refugee camps.¹³ In addition, some people in the agrifood sector are also exposed to additional risks in addition to their precarious socio-economic situation, such as the health effects of pesticides on farmers and seasonal workers or the high accident rate of certain types of work (e.g. in the meat processing industries).¹⁴ The creation of precarious jobs in the food system means that, in addition to being unable to afford an adequate diet,¹⁵ these people also lack the time and resources to cook quality fresh food. However, the transformation of the food system can be a source of green and high-quality employment, innovation and prosperity.

The planet and its limited resources are also under pressure due to our diets and the intensive agrifood model that provides us with food. The food system plays a key role in the current climate emergency, as it accounts for 21% to 37% of all greenhouse gas emissions.¹⁶ It is estimated that 70% of all water extracted from aquifers, rivers and lakes is used in agriculture, with these resources often being overexploited.¹⁷ The farming industry is partly responsible for the pollution of water and soil with nitrates, phosphorus, pesticides and pathogens, and these polluting processes are particularly aggravated by the intensification of livestock production and related waste management.¹⁸ In fact, intensive farming has significantly contributed to soil degradation and the destruction of natural habitats,¹⁹ as well as to the reduction of the planet's biodiversity and the current mass extinction of species.²⁰ The loss of biodiversity poses a threat to key services provided by different ecosystems – such as crop pollination, food, water and oxygen production – and restricts their ability to adapt to changes such as droughts or poor management practices. In other words, it makes ecosystems less resilient.²¹ The Food and Agriculture Organization of the United Nations (FAO) estimates that around 75% of the genetic diversity of agricultural crops was lost in the 20th century.²² More and more stakeholders are advocating a transformation of these farming practices towards more sustainable options that regenerate our limited resources and ecosystems, such as agroecology and organic production.²³ However, the impact caused by our diets does not stop in the fields or on our plates: in addition, we throw away around one third of the food produced for human consumption, approximately 1.3 billion tonnes per year, which is equivalent to the production of 28% of the world's cultivated land.²⁴ A field to plate transformation is thus needed to address these interlinked challenges.

Finally, a number of recent studies have identified **farming as being responsible for around 25% of human infectious diseases**.²⁵ If we include those diseases that originated from other animals, the percentage rises to more than 50%. Recent examples of such diseases include Ebola, bird flu, SARS and possibly Covid-19. Some of the mechanisms that facilitate their spread are closely linked to the practices of industrial livestock farming. For example, the use of antibiotics and antiparasitic drugs on livestock has resulted in resistance to these drugs, some of which are used to treat illnesses in people. The loss of biodiversity (both in crops and in other species) in turn contributes to the spread of diseases from other animals to humans. According to these studies, as agricultural production intensifies, the incidence of infectious diseases will increase.

In this context, **cities play a key role in shaping the food system and its potential transformation**. Urban spaces are responsible for environmental changes at many levels. Although they take up only 3% of the earth's surface area, they consume up to 60% of water resources for domestic use, represent about two thirds of the demand for primary energy, generate more than 50% of waste and produce about 70% of the world's greenhouse gas emissions.²⁶ At the same time, cities generate over 80% of the world's GDP and host a growing number of inhabitants, who account for over 55% of today's world population.²⁷ Cities consume up to 70% of the global food supply,²⁸ even in countries where most of the population is rural. Cities are therefore key agents in the creation of a more sustainable and just food system. This responsibility is increasing since forecasts indicate that by 2050 75% of the world's population will live in cities.²⁷

In the last decade, cities have started to acknowledge the food system's potential to improve citizens'

well-being and create greener, fairer and more prosperous economies and societies. This is proven by the Milan Urban Food Policy Pact, signed by 209 cities from around the globe representing over 450 million inhabitants, who have committed to the development of sustainable, inclusive, resilient, safe and diversified food systems.²⁹ Barcelona was one of the first cities to sign and promote this pact in 2015, and it works side by side with other cities to facilitate and promote sustainable food, for example through the Spanish network *Ciudades por la Agroecología* [Cities for Agroecology]. Barcelona has recently signed the C40 Good Food Cities Declaration, pledging to reduce meat consumption by up to an average of 300 grams per person per day, and to reduce food waste by 50%.³⁰ In addition, in 2021 Barcelona will be the World Sustainable Food Capital and will host the Milan Urban Food Policy Pact Annual Gathering and Mayors' Summit in autumn of the same year. Cities have also been recognised as key actors in the achievement of the Sustainable Development Goals, which have been adopted by all the United Nations member states.³¹ Meeting these commitments and addressing the socio-economic, environmental and health challenges of our food system requires us to commit to and decisively support **the principles and practices of sustainable food.**

What is sustainable food?

Sustainable food involves feeding everyone in a way that benefits people, places and the planet.

In order to achieve this, food must be produced, transformed, sold, bought and consumed in ways that create prosperity, promote social justice, preserve and regenerate our resources and ecosystems, and safeguard future generations' ability to also feed themselves in a sustainable way³².

Sustainable food is:

- Good for **people**, because it ensures that everyone has access to the necessary information, skills and resources to produce, prepare, buy and enjoy safe, healthy, high quality and flavoursome food to enable them to lead a full life. To achieve this, sustainable food is sensitive to the needs of the most vulnerable, both in financial and in social terms, such as children, people who are on their own, dependants and migrants.
- Good for **places**, because it promotes prosperous and diversified local economies that distribute benefits equitably and are able to respond to adversity. It therefore ensures the well-being of the people who work in the food system, both locally and in other places. Sustainable food values traditional diets and knowledge while acknowledging and celebrating the diversity of cultures that enrich our territory. At the same time, it creates positive relations between the urban and rural spaces, as well as between the Global South and the Global North, based on respect for ecological cycles, establishing fairer links between territories and fostering more resilient and caring cities.
- Good for the **planet**, because food is produced, transformed, distributed, sold, bought and disposed of in a way that preserves and regenerates our limited resources, such as water and soil, as well as our ecosystems. Sustainable food helps to tackle the climate crisis, ensures animal welfare (both livestock and wildlife), and preserves and fosters the biodiversity of the planet.



Credits: Photograph courtesy of the Baix Llobregat Agricultural Park Consortium

Putting this definition of 'sustainable food' into practice means taking the following actions³³:

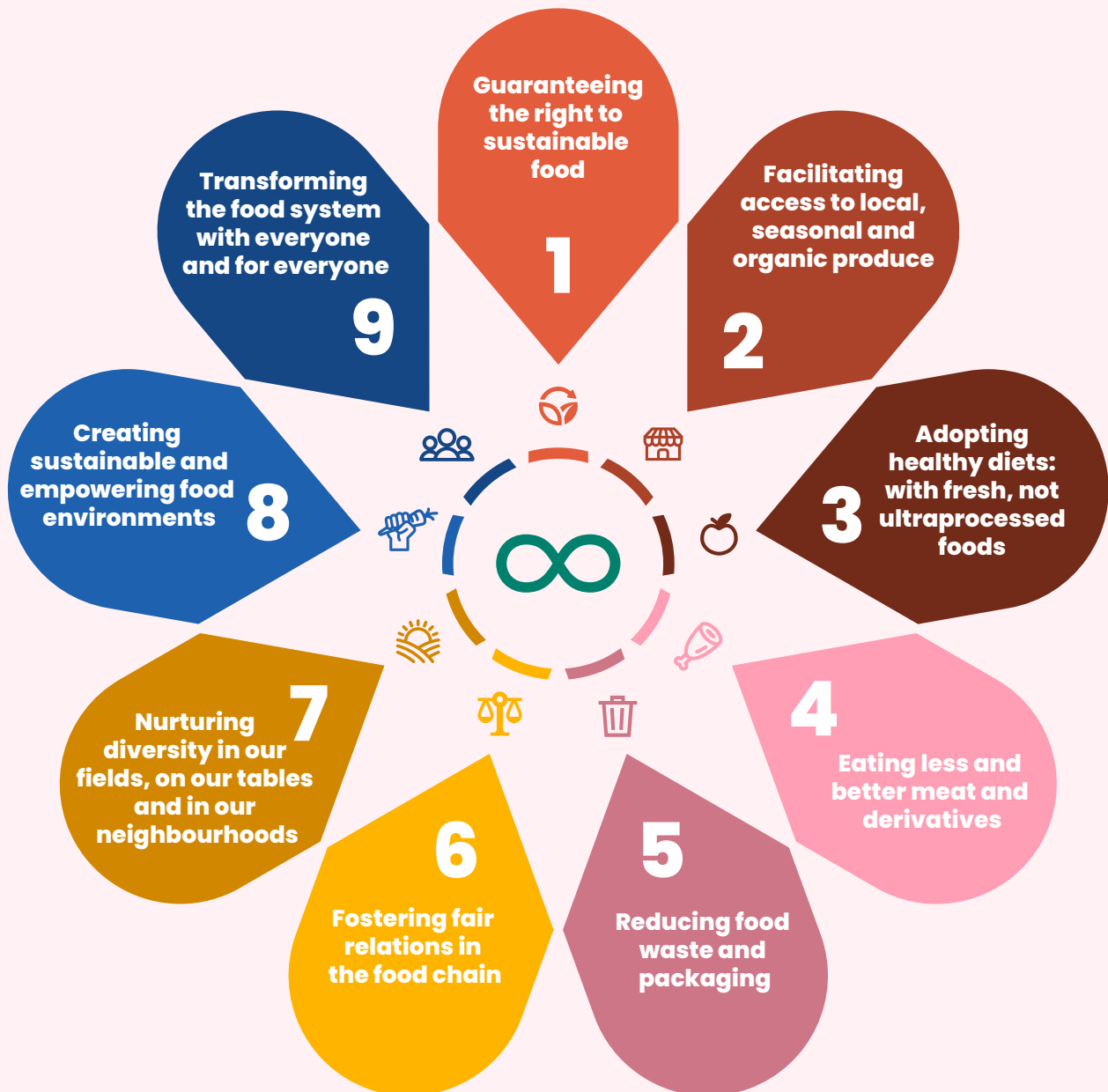
- Guaranteeing the **right to sustainable food**
- Supporting **local, seasonal products that are environmentally friendly**, such as agroecological and organic products and sustainable fishing products
- Adopting **wholefood-based diets that are healthy for both people and the planet**, and avoiding ultraprocessed products
- Promoting the consumption of less and better **meat** and dairy
- Reducing **food waste and packaging**
- Fostering **fair relations** in the agrifood chain
- Nurturing **diversity in our fields, at our tables and in our neighbourhoods**
- Creating **sustainable and empowering food environments**
- Transforming the **food system with everyone and for everyone**

These nine areas of action do not work in isolation since, in order to ensure sustainable food for all, we must integrate these different elements and **work in a** systemic way. The transformation of our food requires not only to foster individual changes in our diets but also to reshape current dynamics in the various sectors (economic, health, environmental, social and political), activities (production, processing, distribution, catering, sale, consumption and disposal) and governance levels (individual, community, local, regional, national and international) that will make possible the transformation of this complex system without leaving anyone behind. To this end, it is paramount to understand and take advantage of the interconnections between the various sectors, activities and actors in the food system, as well as to **acknowledge the particular characteristics of different places and the interdependencies between them**. Barcelona's challenges and capabilities are different from those of other cities such as New York, Milan and New Delhi³⁴. Concrete actions to ensure sustainable food in Barcelona must therefore be adapted to its own unique context. In fact, cities do not feed themselves but rather rely on the existence of dynamic rural areas that supply them with food. Food thus connects many places and actors, from food producers and seed keepers to food industries, research centres, local shops and public institutions. They all have a role and distinctive capacities to change the outcomes of our food system so that it delivers benefits for people, places and the planet. It is therefore important to **cooperate with different places** in the process of developing and implementing sustainable food actions. In Barcelona, for example, it is crucial to think in terms of the metropolitan region or area in order to coordinate policies and enhance the impact of different food initiatives. For that purpose, it is necessary to create coordination and training spaces that bring together the various municipalities, as well as to take part in experience and knowledge exchange networks at different levels, from regional to internal initiatives.

Finally, it is essential when carrying out these actions to ensure the **effective involvement of different groups**, paying particular attention to the most vulnerable and invisible ones, thus including a gender, class, ethnic and racial perspective that will make it possible to identify opportunities for change and put in place unique, effective actions. "Sustainable food" ultimately relies on **people's ability to decide on their own food system**, that is, building food sovereignty³⁵.

Below the nine key action areas to drive sustainable food are described in detail. For each area, we have identified current challenges, followed by concrete possible actions to address them³⁶.

The 9 dimensions of sustainable food



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**Sustainable food
in practice:**
a guide to actions

1 Guaranteeing the right to sustainable food

Problem

The right to food is a human right acknowledged by international law that protects **the right of every person to adequate food**, either by producing their own or by acquisition³⁷. However, global data on malnutrition shows that this right is not respected. In Barcelona, 8.6% of households suffer from some form of food insecurity, with 4% of these suffering from severe food insecurity. This means that not only the quality of their food is low but so is the amount of food consumed by adults and children. Single-parent families (14.6%), as well as the more disadvantaged social classes (24.8 per cent), suffer from greater food insecurity. Ciutat Vella is the district with the highest food insecurity (23.1%), followed by Nou Barris (17.3%)³⁸.



In urban areas, food insecurity is primarily related to a lack of physical and especially financial access to adequate food, i.e. **food poverty**. The strategies used by families to alleviate these situations are very varied and include actions such as going to food banks or skipping meals. For example, around 15% of teenagers in Barcelona city go to school without breakfast³⁹. A number of studies show a clear trend: a lack of resources leads to a change in diet, replacing nutritious foods such as fruit and vegetables with cheap, high-calorie foodstuffs⁴⁰. The difference in cost between a healthy and an inadequate diet in Spain can be over €100 per week for a household, a significant amount that some groups cannot afford⁷. These effects have an impact on the health of both adults and children, showcasing a clear relationship between poverty and obesity or excess weight. In Catalonia, 10.6% of children under 14 are obese, but this problem is three times more widespread in the most disadvantaged groups (13.6%) than in wealthier groups (3.9%)⁴¹. It is therefore essential that we not only feed people but we also **guarantee their right to sustainable food**.

The challenges to access quality food have been exacerbated by the Covid-19 pandemic. Countries such as the United Kingdom have seen the number of people unable to access adequate food multiply by four, which accounts for 16.2% of the population⁴². In Catalonia, in the first eight weeks of lockdown, food bank demand rose by 30%, and enquiries about food aid increased fourfold⁴³. However, it is estimated that food bank users account for only 25% of people suffering from food insecurity⁴⁴. Consequently, the number of food bank users probably represents just the tip iceberg and the rise in the number of people struggling to eat properly is likely to be much greater. In this context,, we urgently need to make people's right to sustainable food a reality.

What can we do?

It is essential that we **satisfy the human right to sustainable food** globally and eradicate food poverty in our cities. In order to achieve this, there are a number of options and criteria that are crucial to satisfy this right in a dignified manner⁴⁵:

- Promoting inclusion and normalisation by supporting initiatives that foster **personal and social autonomy** so that people can choose what food they buy and where they buy it. In order to do this, we must guarantee a minimum income and, until this is available, we should develop tools that promote autonomy, such as prepaid cash cards. Initiatives such as food banks and donations should therefore only be available in emergencies and should always be temporary, as they restrict people's options and decision-making power.
- **Ensuring access to quality food**: Eating is not just about getting enough calories: it is also about meeting nutritional needs. Everyone deserves access to culturally acceptable quality food. It is therefore important to include fresh, seasonal, local, organic and agroecological foods (see sections 2 and 3) when designing food initiatives. [Sustainable school canteens](#) are a clear example of how to guarantee and democratise sustainable food, by ensuring its access to all children and overcoming socio-economic differences. Similarly, it is important to avoid resolving the issue of food poverty by merely donating surplus food and other food that would otherwise go to waste. The leftovers of an inefficient system must be managed by all the actors in the food chain, making it more efficient, rather than simply being routinely redirected to the most vulnerable groups, who deserve to have the same food options as the rest of society. As explained in section 5, there are many mechanisms for making use of food in good condition before it goes to waste and at the same time avoid generating further food inequalities.
- Supporting **community projects** based on equity and reciprocity where there are no distinctions based on each person's socio-economic status. Initiatives such as community kitchens and soup kitchens arising from the experience of people in vulnerable situations - where they are the protagonists and are involved in making decisions - promote people's autonomy and empowerment, foster self-organisation, self-management and the development of mutual support capabilities which contribute to addressing structural aspects linked to social inequalities. There are also other initiatives, such as social supermarkets, community stores and consumer cooperatives, based on the same solidarity principles⁴⁶.
- Ensuring that the **public services that feed the most vulnerable people**, such as school canteens, serve sustainable food 365 days a year (see, in particular, sections 2, 3 and 4). Places run by public bodies have great potential for leading change in the food system by setting an example of best practice. **Public procurement** is a key tool that can be used together with other measures, such as the development of a comprehensive approach to sustainable food in schools that includes academic and practical content, vegetable gardens, cooking workshops, school canteens, family involvement and application of best practices when holding events, such as waste free school parties⁴⁷.
- Creating **multi-sector and multi-actor task forces and strategies to guarantee the right to food**. These spaces help to identify the different processes that lead to people experiencing food poverty in any given neighbourhood or city (from delays in the receipt of aid/benefits to a lack of cooking infrastructure), improve the use and coordination of various resources and support available, and promote the development of medium- and long-term actions to address the structural factors that cause poverty. In this line, it is important to enable those people who are experiencing or have previously experienced food poverty to be involved in the design of strategies and initiatives⁴⁸ (see section 9).

2 Promoting and facilitating access to local, seasonal, organic and agroecological produce and sustainable fishing products

Problem

Farming plays an essential role in our societies, as it feeds a growing number of people. There are different ways of producing food, ranging from agroecological to industrial techniques. Industrial farming, which is often referred to as *conventional agriculture*, entails using synthetic fertilisers and pesticides and intensive farming techniques⁴⁹. This type of farming is partly responsible for the processes of deforestation, soil degradation, water pollution and greenhouse gas emissions⁵⁰. In



addition, it can damage the health of ecosystems

and living beings, including humans. For example, food produced using industrial techniques is more likely to contain residues, such as traces of nitrates, pesticides, drugs given to animals and food additives, which may have adverse effects on health and the environment⁵¹. Some of these substances, such as organophosphate or organochlorine pesticides, can alter our hormonal balance (they are endocrine disruptors), contributing to increase the rate of certain tumours and malformations as well as neurological, reproductive and immune system disorders⁵². The use of some of these substances has been banned in Europe in 2020, and the newly launched European Farm to Fork strategy aims to reduce the use and risk of chemical pesticides by 50% and the use of more hazardous pesticides by 50% by 2030⁵³. However, these advances in the regulation of chemical compounds are tarnished by the overuse of exceptional authorisations of banned pesticides and the rising use of such pesticides in countries of the Global South⁵⁴.

Linked to these industrial production methods, complex storage and transport systems have been developed creating global food distribution chains that have allowed cities to grow exponentially⁵⁵. Technological changes throughout history have enabled cities not to depend on local food systems and instead rely on a global system that provides them with oranges from Argentina or beans from Kenya so that any product can be consumed anywhere in the world 365 days a year. The distance between where food is produced and where it is consumed entails an additional use of energy⁵⁶, requires more infrastructure to be built, makes territories less self-sufficient, disconnects us from the seasonal rhythms of

local farming and can foster unfair relations in the food chain, benefiting those companies with the greatest purchasing power⁵⁷. In fact, it is estimated that 90% of the world's transport is handled by ten agricultural commodity traders, 90% of food processing is carried out by ten companies, and 30% of grocery sales are controlled by ten retail corporations⁵⁸. Under this system, food becomes a commodity instead of a common good and a right⁵⁹.

In addition, the effects of the current food system are also having negative impacts on our seas and oceans. At present, 33.1% of the world's fisheries are being exploited beyond sustainable levels (a figure that rises to more than 62% in the Mediterranean, the world's most overexploited sea), and more than 55% of the surface area of oceans is exploited by industrial fishing⁶⁰. Marine populations as a whole halved between 1970 and 2012⁶¹. The main reasons for this situation are overfishing, illegal fishing, destructive fishing methods and the climate crisis: the oceans are absorbing a disproportionate proportion of the heat that is reaching the planet, which is in turn causing dead zones to appear in the oceans due to their accelerated acidification. In addition to the loss of marine biodiversity and ecosystems, there is the negative economic impact on those human communities that rely on marine resources for their survival.

What can we do?

Promote, sell and buy local and seasonal produce: as the definition of 'local product' is not regulated, it is not easy to establish what it means in practice. In many cities, work on finding a definition has been carried out by establishing criteria in farmers' markets or public procurement guidelines such as the demarcation of a specific area (e.g. Catalonia) or action radius (e.g. up to a distance of 200 km). A commonly used criterion is the use of **seasonal** products that are as local as possible⁶². Seasonal products can be more flavourful and affordable, while local foods can be fresher and benefit local farming and the local economy in addition to helping reconnect consumers with the source of their food^{63, 64}. Identifying these products often involves providing details of their origin on the label or buying from markets and establishments that sell local produce (see below).

There are certifications that highlight the value of foodstuffs in relation to the specific territory where they are produced with the aim of preserving local breeds, varieties, landscapes and traditions, thus supporting local economies. There are two key European labelling systems: Protected Designation of Origin (PDO), which identifies those foodstuffs produced in a particular place whose quality is linked to their natural and human factors (such as cheese from Alt Urgell and Cerdanya); and Protected Geographical Indication (PGI), which identifies those foodstuffs produced in a particular place and whose quality is partly due to the characteristics of that place and at least one stage of production takes place in that place (such as lamb from the Catalan Pyrenees, which is based on the extensive or semi-extensive farming of native breeds)⁶⁵. The origin of farming products is also highlighted by local campaigns or inventories such as the Generalitat de Catalunya's *Llibre dels productes de la terra* [Book of Local Products]⁶⁶.

Purchase directly from local producers and through short food supply chains: Shopping directly from local producers helps reconnect consumers with the source of their food and their local community. It also reduces the distance travelled by foodstuffs as, although products are often relatively local, they go through a number of processing and storage facilities that may be at considerable distances from each other, causing unnecessary impacts⁶⁷. Such purchases can be made through producers who sell products from their own properties, at municipal markets, at farmers' markets or through direct purchases of fruit and vegetable boxes. It is increasingly common for producers to establish partnerships with each other and with local shops and intermediaries, thus creating short food supply chains. There are many initiatives to shorten food chains and share profits more equitably, such as cooperatives, consumer groups and partnerships with municipal markets and local shops. These more direct purchasing methods benefit the local economy, preventing the depopulation of rural areas and protecting production areas and agricultural landscapes⁶³.


At present, and particularly since the start of the Covid-19 pandemic, online shopping and home delivery have become an increasingly important marketing channel for local producers and their partners, which gives the general public and particularly groups that are more vulnerable to the disease or who have mobility problems physical access to these products. This trend provides an opportunity to innovate in terms of physical, social and digital infrastructure, ranging from central storage facilities to centralised ordering applications. It is essential to create systems that facilitate the distribution of these products to a greater proportion of the population while, at the same time, avoiding an increase of their carbon footprint as a result of an expansion of individual transport, reinforcing the disconnection between people or relying on global distribution platforms that do not generate prosperity⁶⁸ (see section 7).

Buy organic and agroecological products: organic products are food products that have been grown without synthetic chemical pesticides or fertilisers (such as fungicides, insecticides or herbicides). They therefore avoid generating toxic synthetic chemical residues that can build up in ecosystems or our bodies⁵¹. They are produced using farming practices that are respectful towards their environment: their management is adapted to the conditions of the specific territory, maintaining crop and other biodiversity, preventing the pollution of water and soil, reducing reliance on oil, and with a lower impact on the atmosphere.⁶⁹ In addition, the price received for their crops by organic producers is usually higher and more stable, enabling them to earn a better living⁷⁰. Genetically Modified crops or ingredients are not allowed in this type of farming system.

These products can be identified through labels issued by official bodies that inspect and certify this type of farming on a regular basis, generating trust in this type of products⁷¹. In addition to organic plant production, these labels also certify animal and processed products, ensuring the following conditions:

- Organic livestock production practices do not permit the use of antibiotics or certain additives in animal feed and ensure greater animal welfare as a result of better rearing conditions, best practices and feeding of livestock on organic products or pasture (for more information, see section 4).
- Processed organic products are plant or animal products processed using techniques that minimise forms of contamination and loss of quality by restricting the use of additives and processing aids.

It is worth noting that some producers work to high environmental and animal welfare standards but are not certified as organic for a variety of reasons. This applies, for example, to some **agroecological producers**. Agroecological production is not just about producing food in a way that is respectful of the environment; it is also about ensuring the farming's economic and social sustainability by fostering diverse practices, ecosystems and knowledge, and creating circular and solidarity



Agroecology is a modality of agriculture based on ecological practices that not only uses traditional and scientific knowledge but also constitutes a social and political project to foster an integral transformation of food systems. It is therefore said to be a scientific discipline, a set of farming practices and a social movement.

Agroecology combines scientific research and community experimentation and drives responsible innovation and technologies that are knowledge-intensive but also low-cost and easy to adapt to small and medium-sized producers. As a farming practice, agroecology uses biological processes to produce healthy and diversified crops, recycling nutrients and without synthetic chemical products (pesticides, fertilisers or antibiotics). Agroecology aims to imitate the way nature itself works by making use of local resources without compromising their integrity or their future availability. In addition to ensuring ecological sustainability in the fields, agroecology is also concerned with social and economic issues, such as working conditions and the need to transform markets to include equality, justice, cooperation, care ethics and responsible production and consumption principles. As a political movement, agroecology is based on food sovereignty, therefore aiming to guarantee peoples' right to affordable nutritious and culturally appropriate food produced in a sustainable and environmentally friendly way, and their right to decide on their own food and production system.

Agroecology is currently acknowledged by governments and institutions around the world as an effective and necessary approach to reducing hunger and injustice, improving health, conserving ecosystems, creating resilience and reducing the impact of agriculture on the climate crisis.

economies⁷². It is therefore important for the support of agroecology to establish close, trust-based relationships between producers and consumers. In some cases, these networks are established by means of participatory guarantee systems, a form of certification in which producers and consumers work together to establish production criteria based on sustainability and mutual support⁷³.

Consume, promote or sell sustainable fish products in a responsible manner, avoiding products from trawling, fishing grounds and overexploited species (see the list [here](#)), and choosing fish with the MSC label for wild catch, ASC for fish farms or organic fish. The MSC and ASC labels are granted by the organisation Marine Stewardship Council which relies on independent audits of the whole supply chain, from the boats all the way to the consumers. These costs are borne by the companies wishing to be certified. The two labels certify fish from fisheries exploited at around the maximum sustainable rate (60% of the total, according to the FAO) or under-exploited fisheries (7%), and both managed in ways that ensure their sustainability. The organic label is only available for organic fish, which has to meet minimum welfare standards and use higher quality feed.

Choose also products caught with more selective and marine diversity-friendly techniques, such as smaller fishing gear, including cages, rakes, fish traps and trammel nets. The fishing gear used to catch the fish in question must be specified on labels at the point of sale⁷⁴. It is also worth noting that 80% of the carbon footprint of fisheries is linked to the use of fuel and, therefore, techniques such as bottom trawling are energy-intensive⁷⁵.

Value fishing communities and our heritage: Barcelona has a fishing port in La Barceloneta, whose fisherfolk and network of collaborators are actively involved in preserving the maritime culture and bringing it closer to the public. One of their activities is to add value and inform the public about species that, in spite of not being in high demand, have high culinary and gastronomic value; as well as showcasing the role of the different elements that sustain this activity, from the fisherfolk, fish and local markets to traditional recipes and consumers⁷⁶.



3 Adopting healthy diets, for people and the planet; with fresh, not ultraprocessed foods

Problem

In Spain, inadequate diets cause around 90,000 deaths a year. In Catalonia, it is estimated that one in five deaths might be related to bad diets⁷⁷. It is therefore urgent to adopt healthier diets and, at the same time, promote production, processing, distribution, marketing and consumption practices with a lower environmental impact. Meeting this challenge is possible. In 2019, the EAT–Lancet Commission proposed a number of criteria to define healthy and sustainable diets, i.e. a

'planetary health diet'⁷⁸. Its report pointed out that

diets that harm the health of people and the planet are those high in calories, added sugars, saturated fats, processed foods and red meat. Furthermore, the environmental degradation associated with such diets can further damage people's health, for example causing premature deaths as a result of air pollution linked to farming and its expansion on natural ecosystems, or the reduction of productivity due to changes in climate conditions.



However, **processed food consumption has grown exponentially** in recent decades: 70% of the Spanish diet is based on processed food⁷. There are different levels of processing, from crushed tomatoes or olive oil to frozen lasagne or sugary drinks. The last two examples are in the category of ultraprocessed products. Ultraprocessed products include snacks, drinks, ready-made meals and many other products prepared from substances derived from other foods or synthesised from diverse organic sources, such as sugars, oils, fats, proteins, fibres and starch. In some cases, these substances have been subject to chemical processes such as hydrogenation; and might include additives, such as colouring, sweetener, flavour enhancers and preservatives, which make the products highly palatable. These industrial foodstuffs are generally rich in salt, sugar or fats and low in fibre, protein or micronutrients⁷⁹. In other words, they provide empty calories, with very little nutritional content. The processes and ingredients used to produce ultraprocessed products are designed to create convenient and very profitable products for instant consumption (low ingredient cost and long shelf life). In addition, they are the subject of aggressive marketing and advertising strategies that lead to an excessive consumption of these products⁸⁰. **Global sales of ultraprocessed products have risen by 43.7%** in the last thirteen years⁷. Most of the calories consumed in high-income countries are now from ultraprocessed products⁸¹, and the consumption of such products is even more common in urban areas⁸². These products have devastating effects on our health. Studies have shown that a 10% increase in

the proportion of ultraprocessed food in our diets is linked to a greater than 10% increase in the likelihood of cancer⁸³. A study carried out in Spain shows that the mortality risk of people who get more than 33% of their daily calories from ultraprocessed products is 44% higher than that of people who receive less than 14% of calories from these products⁸⁴. The Spanish National Health Survey shows a clear link between unhealthy eating and income: **People on lower incomes eat less fresh fruit and vegetables** and drink almost four times more sugary drinks than wealthier people⁸⁵. Furthermore, ultraprocessed products have a high environmental impact. For example, an Australian study has shown that eating ultraprocessed foods contributes to more than one third of the overall environmental effects linked to diet, such as water and energy consumption and CO₂ emissions⁸⁶.

Food safety is also essential for protecting our health. In the context of Covid-19, this topic has become even more relevant. The EU has a food safety alert system that identifies and manages various types of hazards: a) the presence of pathogenic microorganisms such as Salmonella, Listeria, E. coli, norovirus or *Campylobacter*; b) chemical hazards such as pesticide residues, which can be found particularly in fruit and vegetables, as well as compounds such as fipronil in eggs (proof of its illegal use as an antibiotic for animals), heavy metals, undeclared allergens, mycotoxins or the presence of industrial contaminants or chemical substances from packaging; c) physical hazards from the accidental contamination of the product, which can cause choking or damage to the digestive system; and d) other hazards, such as the identification of fraudulent food⁸⁷.

What can we do?

Planetary health diets are based on a greater consumption of plant-based food, including fruit, vegetables, nuts, seeds, pulses and whole grains. In accordance with the World Health Organization's recommendation, it is important to ensure that these healthy foods, particularly fresh fruit and vegetables, are more readily available, accessible and affordable than their unhealthy alternatives⁸⁸. For example, some British cities have launched campaigns to increase vegetable consumption ('veg cities') and promote changes from field to fork. Such initiatives show that there is a great diversity of tools for promoting planetary health diets, ranging from



Breastfeeding: Mothers, based on their values and circumstances, have the right to decide freely how to feed their babies. There are many reasons why mothers may decide not to breastfeed, and it is important to respect this decision since it concerns their bodies and their lives.

FAO and the WHO consider breastfeeding to be the first guiding principle of a healthy and sustainable diet*. Breastmilk is the most local, healthy and nature-friendly food that can be given to babies, because it is designed to meet their nutritional needs and involves no transport or packaging. The World Health Organization recommends exclusive breastfeeding until 6 months of age, and breastfeeding in combination with solid foods up to 2 years of age**. According to this organisation, breastfeeding protects children from illness in both the short and the long term, not only by making them less likely to suffer from digestive and respiratory problems but also by reducing the likelihood of excess weight, obesity and allergies later in life. In addition, it benefits the mother too, among other things, by reducing the risk of breast and ovarian cancer and type 2 diabetes. In spite of these benefits, only 39% of babies in Spain are breastfed by the time they reach 6 months of age***.

It is important to give those mothers who wish to breastfeed the necessary facilities to enable them to do so. According to the WHO, in Europe there are several factors that discourage mothers from breastfeeding, such as limited work-life balance policies, poverty, poor access to health services, social exclusion, obesity, policies and practices that discourage breastfeeding at work, or the marketing of formula (which is made from animal milk and considered an ultraprocessed product). It is therefore essential to improve work-life balance policies, develop specific measures, and design public and private spaces in our cities that support breastfeeding mothers, for example through the creation of breastfeeding rooms, the promotion of breastfeeding areas in cafés and public spaces and the provision of appropriate street furniture in the city. The integration of breastfeeding in the city is essential to bring about a cultural change resulting in women feeling safe and comfortable breastfeeding outside their homes.

* <http://www.fao.org/documents/card/en/c/ca6640en/>

** <https://www.who.int/features/factfiles/breastfeeding/es/>

*** https://www.ine.es/ss/Satellite?l=es_ES&c=INESeccion_C&cid=1259926457058&p=1254735110672&pagename=ProductosYServicios%2FPYSLayout¶m1=PYSDetalle¶m3=1259924822888

voluntary campaigns where different actors commit to specific targets to the development of incentives such as financial support and awards, or the establishment of disincentives such as taxes or bans. Some essential actions include, among others⁸⁹:

Encouraging the **sustainable production of plant-based foodstuffs**: It is important to work with producers to develop and implement strategies aimed at increasing plant-based production, ensure it is profitable and make the sector more resilient. This includes promoting vegetable gardens for schools and personal use that encourage participants to eat fruit and vegetables and increase people's knowledge about health, nutrition and sustainable food⁹⁰ (see also the section on urban and peri-urban agriculture in section 7 on diversity).

Improving the availability of healthy foods: Shops can take steps to encourage people to buy healthy food, for example by displaying vegetables in strategic parts of shops and placing products with high sugar, fat or salt contents far from the checkout areas⁹¹. Food processing and transformation companies, for their part, can increase the amount of vegetables in their products, such as sandwiches and lasagne. Similarly, the restaurant sector and public canteens can increase the amount of healthy products on their menus, for example by offering at least two types of vegetables at each meal, particularly in children's menus. These initiatives can also be implemented in other settings, such as vending machines or food vans, replacing ultraprocessed products with healthy foods. Other examples of best practices are New York's attempt to limit the maximum size of sugary drinks⁹², or Brighton's initiative to establish a voluntary tax on such drinks, with proceeds going to children's sports projects⁹³ (for more related initiatives, see section 8 on food environments).

Guaranteeing access to quality fresh vegetables for everyone, particularly for the most vulnerable: The difference of €100 per week between a healthy and an inadequate diet in Spain can constitute an insurmountable gap for many families⁷. Food banks are playing a critical role in feeding people in situations of poverty, particularly in the context of the emergency caused by Covid-19 but, in the long term, we must ensure access to fresh products and a healthy diet in more empowering manners. There are many ways to achieve this. For example, in the United States, farmers' markets accept food vouchers. In Wales, there are consumer groups that facilitate affordable access to fresh produce. Facilitating the consumption of fresh food in front of processed foodstuffs also requires ensuring access to cooking facilities and utensils particularly in the case of vulnerable groups, which also entails other costs such as a higher energy expenditure. Food poverty clearly overlaps with other forms of poverty. It is therefore paramount to acknowledge the importance of food infrastructure as well as food knowledge and skills when designing interventions to guarantee the right to sustainable food (, see section 1 on the right to sustainable food). Finally, schools, social services and primary care facilities can play a significant role in the provision of health and food-related information and resources. In this line, an innovative example is social prescribing; i.e. medical staff prescribe participation in community kitchens or allotments to improve people's physical and mental health through community projects⁹⁴.



Increasing the appeal of healthy eating: The main aim of this line of action is to promote a cultural change towards society valuing sustainable food and rejecting ultraprocessed products. In order to achieve this cultural change, it is important to involve a great diversity of actors and profiles capable of influencing society so eating sustainable food is considered delicious and the new normal. Advertising, among other factors, plays an essential role in fostering these changes (see section 8, below, on food environments).

Regarding **food safety**, this is a heavily regulated area which aims to protect people's health. The Spanish Agency for Food Safety and Nutrition (AESAN) provides risk prevention information in relation to food preparation and consumption. As a general guideline, it is important to observe good hygiene in spaces used for food conservation, preparation and consumption⁹⁵. It is also essential to consider the needs of different groups when designing health and hygiene legislation. For example, it is very difficult for small farms and processing companies to meet the same requirements as expected for a large industrial factory⁹⁶. Food legislation must be designed to safeguard our health while acknowledging the diversity of the food system, facilitating the transition to a sustainable diet.

4 Eating less and better meat and derivatives

Problem

There is mounting evidence of the **negative health impacts of eating excessive amounts of meat and dairy on**. As explained in the planetary health diet proposal, the consumption of red and processed meat has been linked to certain types of cancer and other diseases, such as diabetes, cardiovascular disease and heart attacks. The **Spanish Society of Community Nutrition (SENC)** recommends eating no more than 475 grams of meat per week (125 grams of red or processed meat and 325 grams of white meat). However, in Spain people consume four times the recommended amounts⁹⁷. In fact, according to the Barcelona Public Health Agency, 78% of children between 3 and 4 years of age eat more meat than recommended⁹⁸. Furthermore, a quarter of the meat consumed is processed, a percentage that is on the rise despite the warnings of organisations such as the World Cancer Research Fund, which recommends keeping its consumption to an absolute minimum^{99,100}. Meat consumption in Spain has recently fallen slightly: 2.6% between 2017 and 2018⁹⁸.



According to the United Nations, global livestock farming is responsible for 14.5% of greenhouse gas emissions¹⁰¹. This contribution is higher than the direct emissions produced by the world's cars, lorries and aeroplanes combined¹⁰². It is therefore a sector **that contributes significantly to the current climate crisis**. In spite of this, it is essential that we **acknowledge the different types of livestock farming which have very different environmental impacts**. In fact, the main reasons for these environmental impacts are the following¹⁰³:

- A significant part of global livestock production entails using intensive and industrial management techniques. In other words, it is carried out in closed facilities, using animal feeds from conventional markets – and often from other countries – which result in generation of high levels of polluting waste and use of large amounts of energy and other external inputs¹⁰⁴. In these cases, an important amount of resources are mobilised to produce relatively small amounts of meat or animal products. For example, 7 kg of feed and 15,415 litres of water for 1 kg of beef; 4 kg of feed and 5,988 litres for 1 kg of pork; 3,265 litres for 1 kg of egg; or 2 kg of feed and 4,325 litres for 1 kg of chicken¹⁰⁵. In addition, the production of animal feed generates emissions, particularly of nitrogen oxide, thereby also contributing to the climate crisis¹⁰⁶.
- The digestive systems of livestock, particularly ruminant animals such as cattle and sheep, emit methane, a gas that contributes to the greenhouse effect.

- Forests and other natural greenhouse gas absorption systems are cut down to give way to new grazing livestock systems and also to produce animal feed (mainly genetically modified maize and soy). Such practices also have a negative impact on local ecosystems and biodiversity.
- Animals, animal feed, meat products and waste from industrial farming are often transported long distances with energy-intensive cooling systems.
- The consumption of meat and animal products is on the rise. Although this trend has slowed down in the Global North, it is estimated that demand for animal products in countries of the Global South will double by 2030 (as compared to consumption levels in 2000)¹⁰⁷.

Most of the meat and animal products consumed in Spain come from industrial and intensive livestock farming, which often means that animals live in confined spaces. **Animal welfare** is highly regulated in Europe, but these standards are often considered insufficient in the case of intensive livestock farming¹⁰⁸. For example, 82% of Spain's laying hens live without sunlight in cages the size of a standard sheet of paper¹⁰⁹. Spain is the top country for this type of farming, which is decreasing in other parts of Europe: in countries such as Germany, the Netherlands and Austria, only about 10% of all hens are caged¹¹⁰.

What can we do?

There is an increasing amount of scientific evidence of the benefits of **eating more plant-based foods**, such as fruit, vegetables, pulses, nuts, seeds and whole grains, for both our health and the environment¹¹¹. People with plant-based diets are less prone to obesity and excess weight¹¹², have fewer blood pressure and cholesterol issues, have a 32% lower risk of suffering from heart disease¹¹³ and a 10–12% lower risk of developing cancer¹¹⁴. This is because, if they are balanced, vegan and vegetarian diets are generally lower in fat, salt and sugar and higher in fibre, and they contain a wide variety of nutrients, such as vitamins and minerals.



It is therefore important to **reduce excessive meat consumption, particularly of processed and intensively produced red meat**. There are many initiatives to encourage these changes. For example, in the city of Ghent, every Thursday is Veggie day, and more than 90 restaurants, 20 hotels and 50% of the population become vegetarian for the day. This weekly activity includes the promotion of venues offering vegetarian food by means of maps and holding vegetarian cooking courses for professional chefs and families. Other similar actions include reducing meat portions and processed products in restaurants, encouraging the food service industry and events to include vegetarian and vegan options, or involvement of public institutions in providing support and disseminating these types of good practices and others led by the private sector.

When we eat meat, it is important to **support local products from organic farming and from systems combining crop-livestock and extensive livestock production**; i.e. 'livestock that uses local fodder resources by means of grazing, generally using breeds and varieties that are adapted to the conditions of their environment and therefore require few external inputs (including both material ones (feed and other food) and energy inputs) and develops under sustainable conditions'¹¹⁵. Diversification of animal breeds and their feed is key to increasing tolerance to climate changes, pest outbreaks and diseases¹¹⁶. Such support can be provided through individual purchases or by facilitating the participation of these producers in local markets, encouraging them to increase their supply in small shops and municipal markets. The food service sector and public canteens (such as those of schools, hospitals and care homes) can also play a key role

by serving these products. The increase in supply can be complemented by promotional and educational activities or the general public and agrifood professionals on the role of this type of livestock farming in creating more sustainable food systems f.

The certifications that differentiate products with higher animal welfare standards or a lower environmental impact include, among others:

- **Organic certification:** Organic animal products are produced under decent living conditions for livestock and herds that respect their biological and behavioural needs. These animals are also fed on organic products. The herbivores have access to pasture, and the poultry and pigs have access to courtyards. Their indoor rearing space is regulated and must have a minimum surface area, let plenty of natural light in and be perfectly ventilated. Ensuring good animal health is related to choosing suitable breeds, good husbandry practices, appropriate density and high-quality feed. The use of antibiotics for preventive purposes is not authorised.
- **Products from extensive and pasture-fed livestock farming:** There is currently no certification as such with a label that regulates extensive and pasture-fed animal farming. However, there are many initiatives promoting extensive livestock farming and pastoralism due to their benefits for the environment and animal welfare. These initiatives emphasise the positive impacts of supporting this type of livestock farming on the rural environment and local economies, and consequently also promote local consumption. Examples of such initiatives include, among others, participatory guarantee systems [*certificación social participativa*]; dedicated platforms for finding producers, shops, consumer groups and restaurants¹⁷; or movements such as the Platform for Extensive Livestock Farming and Pastoralism (*Plataforma por la Ganadería Extensiva y el Pastoralismo*)¹⁸ and the group #sompastores in Catalonia, which highlight the positive impact of these practices beyond consumption.
- **Free-range eggs and chicken:** chicken farming is one of the most intensive livestock farming activities. A number of different farming models can be identified using the numbers printed on the eggs (in brackets), which represent an animal welfare ranking from lowest to highest: caged (3), barns(2), free-range (1) and organic (0). The best option for environmental and animal welfare purposes are organic products (see above). Alternatively, the conditions for rearing free-range hens include uninterrupted, all-day access to an outdoor space. This space must be mostly covered in vegetation, and there are limits on density, with a minimum of 4 m² per hen¹⁹. These differences in animal welfare are significant compared to conditions in barn or cage systems, where hens are rarely exposed to sunlight and live in comparatively dense spaces.

5 Reducing food waste and packaging

Problem

Over 1.3 billion tonnes of food are wasted every year, from the field to our plates.¹²⁰ We throw away between 25% to 30% of the food produced for human consumption which generates around 8% to 10% of all human-generated greenhouse gas emissions¹²¹. This waste of resources has environmental and socio-economic impacts. For example, if this waste was used to feed livestock, it would free up enough grain to feed an additional 3 billion people a year; in other words, 40% of the world's population¹²².



Food is wasted throughout the entire food chain. In the EU, it is estimated that households are responsible for around 53% of food waste, while 19% is generated in food processing, 12% in food services, 11% in production and 5% in wholesale and retail¹²³. In Spain, the households that waste less food are those from lower socio-economic backgrounds, together with independent adults and young people, single-parent households and retired people¹²⁴.

The food system not only generates food waste but also uses a very large amount of **packaging**, from packaged fresh fruit to takeaway meals. Part of this food packaging can help extend food's shelf life, but in many cases serves merely cosmetic purposes. Also many packaging materials are not easily recyclable. The manufacturing of packaging uses precious resources and energy, from metals for making tins to oil and chemical additives for making plastic. Plastic has become one of the main waste management challenges due to its widespread use, low recycling rate, and impacts on people and the planet. Every minute we pour the equivalent of one garbage truck of plastic into the ocean, but the impact of plastic packaging is even greater: it is estimated that, in Spain alone, around 50% of plastics end up in landfill, making them more likely to pollute the water, air and soil^{125,126}. Microplastics are also increasingly affecting both animals and people, particularly those who drink bottled water, with potentially harmful effects on their health¹²⁷. Bottled water thus has significant ecological costs – relating to bottling and transport – as well as financial costs: in Catalan households, €1,000 worth of bottled water would cost 17€ for the same volume from the tap¹²⁸.

What can we do?

The best waste is the waste that is never produced in the first place. It is therefore crucial to foster **practices and the development of skills that minimise food waste** throughout the entire food system, from production to consumption. In this line, it is important to value sustainable food practices that minimise overuse and waste of resources. Such practices are often carried out by groups with fewer resources and

generally are rather invisible since they do not involve consuming more or different products but making better use of them¹²⁹. For example¹³⁰:

- **Avoiding excessive consumption:** Planning one's shopping and meals helps minimise waste. Access to knowledge about the nutritional needs of different groups in society, from infants to elderly people, is useful for this purpose. Shops can encourage responsible consumption by removing 'Buy One, Get One Free' and similar offers, which contribute to food waste.
- **Storing food appropriately** in larders or cooling systems. This includes, for example, storing fruit in well ventilated conditions and knowing the differences between 'best before' and expiry dates on labels. If we want to encourage people to consume fresh produce, it is important to ensure that they have access to cooling systems and adequate food storage spaces.
- **Avoiding waste by reusing or sharing:** This includes, for example, using leftovers or sharing them with others through personal relationships, donating surplus food to food redistribution initiatives such as community fridges, and encouraging restaurant customers to take their leftovers home. Another example of a food loss prevention action in the field is the [Espigoladors](#) initiative, which combines the efficient use of food, the right to a healthy diet and the creation of job opportunities for groups at risk of social exclusion.
- **Reconsidering sizes and sale criteria:** This includes actions such as offering smaller portions and adjustable sizes, encouraging people to buy in bulk or putting products on special offer before they become perishable, all of which can help minimise food waste in people's homes, businesses and the restaurant industry. Supplying and buying products that do not meet certain requirements as to size and appearance also helps to minimise food losses in the field.
- When food waste *is* created, however, there are a number of options to **minimise its impact**, such as using it to feed livestock, composting it individually or collectively to make fertiliser that can be used in urban allotments or school vegetable gardens, or recycling it by separating the organic matter from the other components for recovery.

There are many options for reducing the impact of the packaging used in the food system. The first option must always be to **minimise the use of packaging**¹³¹. There is an increasing number of alternatives to stop using such packaging. A clear example is the use of tap water and fountains instead of bottled water, or carrying reusable bottles. In order to motivate these changes, it is important to ensure easy access to quality water in public and private spaces. Along similar lines, an increasing number of individual and collective initiatives are encouraging zero waste practices and **reusing containers**, such as buying in bulk, using fabric bags to weigh fruit and vegetables, reusing shopping bags, using reusable coffee cups and crockery in everyday life and at events, or even using one's own containers at the butchers' or to take leftovers home. Not all containers can be safely reused, so it is important to choose ones made out of materials that are suitable for frequent use¹³². In addition, food safety standards must be considered, and consumers' responsibility in these initiatives must be clearly defined.

Although reducing the amount of packaging or reusing it are the most desirable options, it is also possible to **replace the most polluting containers with others less harmful for our planet**; e.g. replacing polypropylene trays with recycled cardboard trays. However, it is worth considering every impact; i.e. the life cycle of each material from the manufacturing stage to its recycling or disposal, as some materials presented as biodegradable might actually contain plastics originating from fossil fuels¹²⁵.

6 Fostering fair relations in the food chain

Problem

The world of work is going through major changes such as digitisation, the fragmentation of job contracts or robotisation¹³³. Covid-19 and its related socio-economic crisis is unleashing further and more rapid transformations: **The food system has great potential to create prosperity**, as it generates a large number of urban and rural jobs ranging from fishing to food services. However, there is also precarity in many food-related jobs which limits the potential positive impact of food systems on people and specific places. Low quality jobs, particularly those characterised by low wages and temporary work, have a direct impact on the amount of money that people can afford to spend on food. In general terms, the percentage of resources spent on food by Spanish households has fallen by more than 65% since the 1960s¹³⁴. In addition, this expenditure is relatively flexible in relation to other expenses such as housing and utilities, which have risen by over 194% in the same period. For example, in 2018 the lowest-income households spent about 18% of their income on food, as compared with more than 45% on housing and utilities¹³⁵. People change the type and amount of food they eat based on their income, with a tendency to consume cheap and unhealthy calories when financial resources are scarce¹³⁶ (see section 1). However, precarity also results in 'time poverty', which affects food planning, buying and preparation. This reproductive and invisible work (care-based and unpaid) entailed in eating, particularly in a sustainable way, is often carried out by women and affects the types of work available to people in caring roles¹³⁷. Therefore, promoting a work-life balance that includes adopting sustainable food practices has social, financial and environmental benefits as well as positive outcomes for our health. It is essential that we use the agrifood chain itself to promote fair employment relations and regenerate our societies, especially after the socio-economic impact of the pandemic.



The fall in food spending and the associated race to provide the public with **apparently cheap food has many costs to our health, the environment and our economies**¹³⁸. In the agricultural sector, precarious job conditions are largely linked to the low prices paid to farmers for their products. For example, 2020 data on agricultural prices shows that the price of a conventional potato at the point of origin is €0.17/kg, as compared with the €1.25/kg paid by consumers. This price hike of over 600% can also be seen in other products, such as onions. A number of agricultural organisations have complained that products are often sold at a loss; i.e. under their production cost¹³⁹. This data partly helps to understand land abandonment and the disappearance of farms¹⁴⁰. Between 1999 and 2009, 23.2 % of Spanish farms disappeared¹⁴¹ and, although the trend has been slightly less marked between 2009 and 2016, the equivalent of 17 farms a day has disappeared in the latter period¹⁴². Small farms are more likely to disappear, in spite of their contribution to food security, the maintenance of a living rural environment and the preservation of biodiversity and rural landscape, traditions and culture¹⁴³.

Many agricultural, agrifood and food services companies engage in good practices, but there are also many insecure and precarious jobs in the agrifood sector. Seasonal workers' conditions have been denounced

on many occasions, mainly in relation to wages, housing conditions and even forms of violence and abuse, particularly against women¹⁴⁴. In other parts of the food chain, such as in some food processing industries like the canning and fish processing industries, wages are very low; and the risk of accidents in abattoirs is particularly high¹⁴⁵. The food service sector has a very high rate of temporary work. According to data from the State Public Employment Service (SEPE), these jobs have a high staff turnover, with an average of 2.59 contracts per position¹⁴⁶. This sector is particularly relevant in Spain. In 2018, most new contracts were for waiting staff, which accounted for 12.37% of the country's employment contracts. Between 2011 and 2018, the number of contracts for this job rose by 117.79%, from 1.2 million to 2.7 million. The food service sector is particularly economically relevant for cities. It has been estimated that employment in the hotel and restaurant sector in Barcelona will increase by about 70% between 2013 and 2033¹³². The Covid-19 pandemic has radically affected these forecasts while highlighting the insecurity of certain working environments, some of them linked to the food system. These include, for example, the meat industry and rural workers, who are at greater risk of infection, partly due to migrant workers having no access to decent housing¹⁴⁷. In rebuilding a post-Covid-19 food economy, it is essential that we support every stage in the agrifood chain to address common challenges and improve working conditions, particularly in relation to temporary work, the gender gap or low wages, which are generating working poverty, i.e. where people are at risk of exclusion in spite of having a job¹³³.

Unfair relationships in the agrifood chain are not restricted to our local food economies, as our food travels **all over the world**. The international food trade has been greatly criticised not just for its environmental impact but also for its social and economic effects, which disproportionately affect people in situations of poverty in the Global South, particularly small farmers in rural areas¹⁴⁸. International trade rules can give rise to unfair relationships that prevent many countries from protecting their markets from other products that have benefited from advantageous tariffs or from subsidies in their countries of origin. These foods imported at artificially low prices displace local products, causing poverty among producers and even encouraging them to abandon farming, and therefore increasing these territories' reliance on food imports¹⁴⁹. In addition, a large proportion of the global food market is dominated by a small number of companies. For example, four companies control over 70% of the international cereal trade and are therefore in a position to set prices that do not take into account producers' needs¹⁵⁰. In fact, the price of some crops – such as coffee – is established on the New York stock exchange and is therefore increasingly detached to their production cost. This trading system has devastating consequences for many farmers and agricultural workers who have to deal with gruelling work, ridiculously low wages and, in many cases, no employment rights¹⁵¹.

What can we do?

Food also provides an opportunity to **promote fairer relations that generate prosperity** and help eradicate all forms of poverty. In fact, promoting justice through food requires us to address the different forms of exploitation, racism and oppression that take place throughout the food chain and, therefore, address the fundamental causes of inequality both inside and outside the food system¹⁵². Some actions in this line include:

- **Supporting initiatives that promote more direct relationships between the various actors in the food system.** These include, for example, buying food directly from producers and short food supply chains to help them retain a more significant portion of the price paid by consumers. In addition, these more direct transactions can lead to a more equitable distribution of power when it comes to setting prices, as they remove intermediaries who might hold the key to selling or accessing certain products and are therefore able to affect prices.
- **Ensuring quality employment within the food system:** There are many initiatives intended to promote fairer employment relations. For example, there are campaigns promoting the establishment of living wages, which are wage rates based on what people need to live (this is usually more than the minimum wage and varies depending on the cost of living in each city). Internationally, such activities have been

carried out in countries like the United Kingdom, where there are campaigns to ensure this [living wage](#), in public and private sectors and also within food and beyond. In the United States, certification systems have been developed to ensure decent working conditions, such as [food justice](#) and [food equality certification](#). These certifications can be tools for improving public procurement systems or developing more socially sustainable private initiatives¹⁵³. Along the same lines, the campaign '[Fruta con justicia social](#)' [Fruit with Social Justice] has been launched in Lleida with the aim, among others, to establish a certification that guarantees seasonal and migrant fruit pickers' social and employment rights. Tenders for public contracts can include criteria to reward companies with work-life balance policies and other mechanisms that improve employees' quality of life (see: [Contratación pública social](#), Barcelona).

- **Supporting social and solidarity economy initiatives:** The social and solidarity economy is based on the creation of an economic system that delivers benefits for people, the environment and places, aiming to operate in accordance with democratic, horizontal, transparent, equitable and participatory principles. The solidarity economy is based on a new way of producing, distributing and consuming, and it works towards the construction of viable and sustainable alternatives that meets both individual and global needs¹⁵⁴. There are many initiatives that work to achieve these aims in the food system, such as cooperatives and consumer groups, circular economy initiatives and initiatives for the efficient use of resources such as those of gleaners' initiatives and cooperatives relating to the production, transformation and marketing of agroecological products, as well as shops and restaurants. To see examples of these projects in Catalonia, see the '[Pam a Pam](#)' solidarity economy map.
- **Buying fair trade products:** Fair trade is a trade system based on dialogue, transparency and respect that aims to achieve greater equality in international trade, including social and environmental criteria in trading relationships. Fair trade aims to provide better trading conditions and guarantee producers' and disadvantaged workers' rights, particularly in the Global South¹⁵⁵. There are many fair-trade initiatives. The most widely known worldwide is the Fairtrade certification, which offers producers a minimum price covering the costs of sustainable production and includes financial support for the local farming community. This certification can be found in shops, restaurants, cafés and public places, among others. There are also other initiatives aimed at ensuring that fair trade principles are adhered to throughout the food chain rather than just at the farming stage. This group includes alternative trade organisations, such as Oxfam or Alternativa3¹⁵⁶.

7 Nurturing diversity in our fields, at our tables and in our neighbourhoods

Problem

Diversity is essential as part of a sustainable and nutrient-rich diet that promotes the resilience of agricultural ecosystems as well as local food systems. However, the loss of diversity in our food system is exposed not only in terms of what we eat but also in how we obtain our food. Over 60% of the plant-based calories we consume worldwide come from only three foods: rice, wheat and maize^{157, 158}. In addition, we have very little variety in our food. For example, there are over 7,500 varieties of apples in the world, yet 50% of the apples produced in Europe belong to only five varieties¹⁵⁹. Globally, we **have lost 75% of crop diversity in the last century**¹⁶⁰. The increasing availability of processed products also leads to a general perception of having access to greater diversity, however, under very different wrappings the components of these foodstuffs are actually very similar: it is estimated that more than 60% of processed products contain soya and maize. This is partly due to the homogenisation of production standards (such as weight, size, appearance and composition) set by an increasingly globalised and centralised food system. This concentration and homogenisation process is also affecting our purchasing habits: in the last ten years, Spanish households have increased the volume of supermarket and discount store purchases by 23%. These channels account for over 60% of household expenditure on food to the detriment of traditional retailers such as markets and local shops, where shoppers are progressively buying less and which, according to data from 2018, account for only 17.7% of our spending⁹⁸.



The loss of diversity in the fields, at the table and in our streets contrasts with the exponential growth in cultural exchanges: 300 different languages are spoken in Barcelona alone¹⁶¹. This other type of diversity provides a great wealth of knowledge and food experiences to transform urban food systems. Furthermore, it shows the importance of avoiding generalist, one-size-fits-all solutions to ensure that everyone has access to culturally appropriate foods. The plurality of cities is also spatial since there are many differences between neighbourhoods and districts within the same city. For example, the district of Ciutat Vella has a large inflow of migrants and it is particularly impacted by the growing number of tourists in the city; Horta-Guinardó is the least densely populated area and has a high proportion of elderly people over 65 (24%); while Gràcia has a particularly low unemployment rate as well as number of green areas¹⁶². It is essential to build on this diversity to create a fairer and more sustainable city through food.

Urban and peri-urban agriculture is defined as the growing of food and other agricultural products (such as spices, aromatic herbs, fodder, fuel crops and others), as well as the production of poultry, cattle and fishing in or around urbanised areas*. Urban and peri-urban agriculture is an integral part of cities' socio-economic and ecological systems and is a way of making sustainable food visible in the city as well as reconnecting citizens with it. This type of farming uses urban resources (land, labour and the city's organic waste) and is influenced by urban dynamics, such as policies and legislation, competing land uses, urban markets, transport and food prices that affect its how urban agriculture develops and impacts on the city. Urban and peri-urban agriculture can have many benefits**:



● **Social impacts:**

- Creation of safe spaces in urban areas
- Access to land
- More close-knit communities
- Training and skill-building opportunities for different groups
- Inclusion and cooperation between different cultures and generations

● **Health effects**

- Improved food security, particularly access to food
- Increase in fruit and vegetable consumption
- Increase in food and health knowledge
- Improved general well-being of people (mental health and physical activity)

● **Financial impacts**

- Creation of jobs, training opportunities or development of businesses and innovation activities
- Market expansion for farmers
- Financial savings on food purchases
- Savings for the public sector (e.g. management of green areas or empty sites)
- Increase of house value

These effects depend on the type of urban and peri-urban agriculture, as it takes different forms in different cities in the world. These differences are due to:

- The actors involved (e.g. young people, children, the elderly, people with health problems)
- Location: intra-urban or peri-urban; in the ground or in pots, terraces, balconies, roofs, etc.; public or private places, etc.
- Types of product grown
- Types of activities carried out (e.g. breeding seeds, production, processing, sales, training, awareness activities, etc.)
- Intended use of the products: personal use, market, donations, etc.
- Scale of production and technology use

The promotion of urban and peri-urban agriculture has been one of the first elements of many urban food strategies and policies. In the case of Barcelona, the city has had an Urban Agriculture Strategy (UAS) since 2019. This was designed as a tool for planning the necessary actions to improve and increase the city's agricultural surface area following as well an agroecological model. The city currently has around 150 urban allotments and 355 school vegetable gardens. The allotments in Barcelona aim to maximise environmental and social services by developing growing spaces in the city to benefit people and protect biodiversity. The plan includes a ten-year vision which will result in an environmentally-friendly, healthy and resilient city whose residents are involved in the management of allotments and the promotion of agroecology and food sovereignty. There are 25 new urban allotments planned to take hold in the city in the next few years***.

*RUAF (2020). 'Urban Agriculture and city region food systems: what and why'. Available at: <https://ruaf.org/urban-agriculture-and-city-region-food-systems/#urban-and-peri-urban-agriculture>

** 'Urban Agriculture Impacts: Social, Health, and Economic: A Literature Review'. UC Sustainable Agriculture Research and Education Program. Agricultural Sustainability Institute at UC Davis. Available at: https://assets.jhsph.edu/cif/mod_cifResource/doc/UA%20lit%20Review-%20Golden%20Reduced%2011-15.pdf

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Infrastructure for sustainable food

Eating entails mobilising various infrastructures which connect actors across the supply chain, such as physical (such as shops and markets), social (such as agreements between farmers and intermediaries) and digital infrastructures (from food maps to mobile applications that coordinate the demand and supply of agroecological products). These infrastructures can be public (such as Barcelona's municipal markets), private (such as shops) or community-based (such as cultural cooperatives and consumer groups). Food infrastructures are often hybrid, as in the case of wholesale markets combining public and private ownership. They can also be for individual use (our own kitchens) or collective use (community fridges). These infrastructures are sometimes stable and formally established, such as local physical shops, while others are mobile or informal, such as weekly markets or vans selling fresh or ready-made food (such as food trucks). The urban food infrastructure is diverse and connects the city to its hinterlands but also other regions and countries.



The Covid-19 crisis shows how urban infrastructure can be reinvented to feed the city. For example, people have used their home kitchens and coordinated with their communities to feed local residents or became food couriers to look after the most vulnerable. In addition, local agroecological projects have significantly increased their activity by developing innovative distribution systems to supply the population in lockdown and at the same time, repurposing surplus food that would previously have been used for restaurants or school canteens avoiding the generation of food waste. These efforts show the importance of maintaining and developing infrastructures that guarantee sustainable food for all, promoting social and technological innovations that increase the resilience of the food system. In the last few decades food infrastructure has been progressively privatised and concentrated in large commercial groups to the detriment of more diverse and territory-based food chains, capable of redistributing value and power throughout food actors in a more equitable way*. Cities such as Barcelona have successfully kept some important and iconic infrastructures such as the **municipal markets** and the Barcelona wholesale market (Mercabarna) in public hands. The Barcelona network of 39 municipal markets performs many social, economic and cultural functions, with a clear impact not only on the city's foodscape but also on the metropolitan and regional food systems**. It is essential that we boost the role of these local government-run facilities to promote more equitable relationships between the various actors in the food chain that lead to the creation of public goods such as sustainable food.

*Moragues-Faus, A.; Marsden, T.; Adlerová, B.; Hausmanová, T. (2020). 'Building Diverse, Distributive, and Territorialized Agrifood Economies to Deliver Sustainability and Food Security'. *Economic Geography*, 1-25. Available at: <https://doi.org/10.1080/00130095.2020.1749047>

**Civil Society Mechanism of the Committee on World Food Security (2016). 'Connecting small-holders to farmers: An analytical guide'. Rome: CSM. Available at: <http://www.csm4cfs.org/wp-content/uploads/2016/10/English-CONNECTING-SMALLHOLDERS-TO-MARKETS.pdf>

What can we do?

- **Value diversity** in fresh foodstuffs and quality products, as well as promote dishes, menus and diets that include different products. Facilitating the marketing and consumption of different animal breeds and varieties promotes the conservation of biodiversity and our agroecosystems' ability to adapt to change. To really value this diversity also involves acknowledging the work of farmers and **seedbanks**, which preserve crop diversity and make them available to society¹⁶³. Another example of valuing diversity is encouraging the consumption of different fish species in order to protect our culinary heritage and avoid overexploitation. In the port of La Barceloneta, you can find local species such as chub mackerel, Atlantic stargazer, Humboldt squid, forkbeard, white seabream, annular seabream, African armoured searobin, grey gurnard, red pandora, red bandfish and blackbelly rosefish¹⁶⁴.

- **Creating both individual and collective spaces to nurture food diversity** and the sharing of knowledge. Such spaces can range from gatherings around community kitchens to markets or festivals. An example is the Nou Barris ‘Soups of the World Festival’, which celebrates diversity in the form of 100 different soup recipes cooked by neighbours and shared with all residents. Urban agriculture in the form of social, municipal and community allotments is also an example of producing sustainable food but also for creating a sense of community. Urban allotments and community gardens are often places of caring and exchanging between different cultures and generations. As mentioned above, general practitioners in some countries even prescribe community allotments as a way of improving people’s physical and mental wellbeing. These places can also have positive environmental effects for example expanding and preserving on the city’s biodiversity. For that purpose, it is important to foster agroecological practices in urban settings, avoiding the use of pesticides or other products that can place people and local wildlife at risk. Urban allotments therefore provide fresh and healthy food, help create greenery in disused spaces such as empty lots, and contribute to filter and clean the air, absorb carbon dioxide, create absorbent surfaces and prevent the loss of water¹⁶⁵.
- **Supporting diversity in shops and food initiatives:** If we buy most of our food from various local businesses, a significant part of our resources will stay in our city, helping create jobs and keeping our streets rich and diverse. This form of consumption also helps reduce the use of transport and create a lively commercial fabric in our neighbourhoods. For example, 55% of the population in the Barcelona metropolitan area live within 1 km of 40 or more establishments selling fruit and vegetables¹⁶⁶. In order to promote and preserve this type of food infrastructure, it is important that we support and value shops, municipal markets and independent food service providers. Cities around the world have used different tools to achieve, such as certifications or associations. In Bristol (United Kingdom), they have gone even further and created a local currency as well as launched a campaign (‘Bristol independents’) to showcase the added value of local food initiatives. Another innovative example of such initiatives can be found in Toronto, where migrants and refugees have the chance to set up a food business in a food van managed by the city council as a way to start up their own business. There are also urban planning tools and incentives that help create a diverse and vibrant local trade, for example by ensuring good public transport access to traditional and farmers’ markets. Other actions include,, providing advice to new businesses, promotional campaigns, support based on reduced fees and rates, or adding criteria related to diversity of providers when it comes to organising public events¹⁶¹.
- **Fostering collaboration between organisations, producers, shops, municipal markets and small and medium-sized enterprises in order to deliver diverse solutions and at the same time scale-up responses and have capacity to address** sudden changes. Creating a diverse and cooperative food fabric and infrastructure can help respond to different needs while providing larger-scale solutions. A clear example of this is the creation of food hubs which share physical and social infrastructures to make a a more efficient use of resources. An example of one such food hub is [the Stop](#) in Canada, which combines a soup kitchen with support and advice for vulnerable people, a food bank stocked with healthy food, a pregnancy support group, a training and awareness area, a food production and composting area, an oven, a sustainable food market and a community kitchen. There are also smaller initiatives, such as the creation of industrial kitchens in sea containers (which are therefore mobile). These are accessible to companies and communities to help them set up catering businesses and can also be used to support community events such as festivals or weddings. In this line, the use of public infrastructure such as school kitchens or municipal markets helps create such fabric and keep them open and accessible. Baltimore, for example, has created a virtual supermarket formed by a network of fourteen public libraries, schools and homes for the elderly where people can place online orders and ask local voluntary workers for help if necessary. Food is delivered to these facilities free of charge to ensure that older people have access to food regardless of where they live or their mobility or computer skills¹⁶⁷.

8 Creating sustainable and empowering food environments

Problem

Every day, we make over 200 decisions about food¹⁶⁸. These decisions are affected by **our food environment**; in other words, by how we interact with food from the moment we wake up until the end of our day. In the city, our food environment is therefore our home, the street where we buy bread, the market where we do our shopping at the weekend, the vending machine at work or the café where we go for a drink or a snack. Food environments are influenced by political, economic and socio-cultural factors. For example, they affect the type of food available, when and where it is available, and its price and appearance. On the other hand, this environment is not just external: it is also affected by our tastes and preferences, by our physical access to food and convenience depending on our daily activities, as well as our ability to afford different foodstuffs¹⁶⁹. This set of factors explains why we eat the way we do and the need to change our food environments in order to make sustainable food for all a reality.



Cities have become obesogenic food environments; in other words, they promote the consumption of products that are high in fat and sugar, such as fast food and snacks¹⁷⁰. These products can be found in all kinds of shops, restaurants and cafés, vending machines and advertisements. In addition, they are very appealing products that can be consumed on the move or while doing something else, so they are particularly suited of different urban lifestyles and schedules. According to UNICEF, this type of **food environment is increasing the rate of child malnutrition in cities**¹⁷¹. Being surrounded by this kind of foodstuffs and advertising messages limits the ability of people to eat sustainably. In fact, it is important to create environments that make choosing sustainable food the easiest and most desirable option. Teaching sustainable food in the school curriculum has limited effects if the way back home is flanked by junk food and sweet shops. Therefore, we need to physically transform our cities: **Sustainable food must be visible, desirable and celebrated.**

One of the challenges of creating sustainable food environments is reclaiming the ability to **shape urban spaces to generate public goods**. This means that our neighbourhoods – with their shops, markets, parks, transport facilities, restaurants and cafés – must facilitate the access to sustainable food for all. The process of transforming the city to create sustainable food environments is riddled with challenges and difficulties, such as food gentrification dynamics. Food can be yet another aspect of the gentrification process; i.e. the creation or expansion of services and infrastructure by governments, economic interests or social groups that attract higher income groups and displace low-income residents¹⁷². These include, for example, market remodelling and elitisation¹⁷³ or the expansion of green spaces through urban agriculture initiatives that attract the middle

classes and increase house prices. Once again, these gentrification processes show the central role played by food in the shaping of cities and how it is linked to other sectors, from planning to housing.

The ubiquity of advertising for unsustainable foods also clearly shows the need to transform our food environments: **one out of every four euros of advertising is spent on food**⁷ and, in Spain, although the agrifood industry has committed to self-regulate its advertising, **77% of food advertisements are for unhealthy foods**, and 46% of these are for products – such as chocolate bars, biscuits, sweets, energy drinks and pastries – which, according to the World Health Organization, should never be advertised¹⁷⁴. Not only do the products advertised have an extremely poor nutritional content but many advertising messages reinforce gender stereotypes and beauty standards that can lead to harmful eating practices, such as anorexia⁷. Similarly, food labelling is still confusing and tends to mislead rather than inform and help consumers make their decisions⁷.

What can we do?

The transformation of food environments requires the implementation of many of the actions mentioned in the preceding sections. However, in order to achieve sustainable and empowering food environments, these principles must also transform the urban structure and our experience of the city.

In order to make sustainable urban food environments a reality, we must incorporate the principles of sustainable food in the process of designing the city. **Urban planning** is therefore an essential tool. For example, some cities have used this tool to protect and promote urban and peri-urban agriculture, limit the opening of fast-food restaurants near schools or require a health impact assessment for granting licences to shops and restaurants¹⁷⁵.

As part of the city experience, we are constantly receiving information about food. It is important to improve the quality and access to this information in order to educate the public about food and help them make decisions. A key factor to support more sustainable decision making is **food labelling**. A number of studies show that food purchases are affected by nutritional aspects although a high proportion of people do not understand the current labels (which generally just show the composition of the product)⁷. It is therefore important to **improve this information**. European labelling legislation opens the door to voluntary changes, such as the traffic light system or Nutri-score where products with high energy, sugar, salt and fat contents are given a red rating. There are also innovative initiatives beyond the food industry, such as restaurants, work canteens, shops or mobile applications that have started to provide this type of information to their customers. In New York, all food establishments must have the nutritional information of their menus accompanied by data on the recommended calorie intake for a healthy diet and provide it to customers upon request⁷. Melbourne uses the traffic-light labelling scheme for food and drinks at public leisure centres and events, including vending machines¹⁶⁷.

Advertising also plays a key role in the provision of information on food and persuading consumers. Some actions to transform **food advertising** include, on the one hand, using opportunities to promote sustainable food in public and private places ranging from public transport, schools, and social and healthcare facilities to television channels, events, advertisements and social media. On the other hand, it is also important to limit or ban advertising that encourages people to eat unhealthy food or what is generally known as 'junk food'. For example, the Mayor of London has banned junk food advertising on the city's public transport network¹⁷⁶.

Another key area relates to marketing strategies. The **marketing** strategies used to sell food products are very diverse, ranging from advertisements to product placement, special offers, sponsorship or free samples, among others¹⁷⁷. There are also increasingly complex techniques to attract and induce certain behaviours (nudging) to promote both healthy and unhealthy eating. These practices can be used in many ways to promote sustainable diets¹⁷⁸. For example, San Francisco has banned restaurants from giving out free toys with children's menus unless they meet minimum nutritional standards¹⁶⁷.

9 Transforming the food system with everyone and for everyone

Problem

Every day, over seven billion people wake up and reproduce an unfair and unsustainable food system with their daily actions. Change is not merely possible; it is also urgent and necessary. As shown in this document, our current food system has deep historical roots and is the result of interactions between different actors and places, which means that its transformation requires multiple individual efforts but, more importantly, collective action capable of having a positive impact on people, places and the planet. In the last few decades, **decisions on the food system have become individualised and concentrated mainly on the market**. In other words, our opinion on food has been relegated to the shopping basket¹⁷⁹. For example, residents have a very limited ability to decide whether they want another fast-food restaurant next to the local school. However, there is growing evidence of the negative effects of unsustainable and unhealthy food on our lives and public finance. There is therefore a pressing need to democratise the development of sustainable food systems, bring food into the middle of the political debate and increase people's food sovereignty. **Citizen involvement** is particularly relevant due to the economic importance of the food sector which generates vested interests and increases the ability of powerful actors to influence decision-making spaces¹⁸⁰. In relation to this, studies have shown how conflicts of interest have hindered the implementation of public policies and recommendations to support more sustainable food systems⁸².



Decision-making processes have also been significantly transformed. The more traditional exclusively government-run models for policy and decision-making have gradually evolved, and new **forms of governance** have emerged in which the public sector works together with civil society and the private sector in the development of plans, policies and concrete actions. Involving different actors and sectors of the food system provides distinct knowledge and capabilities to collectively identify challenges and possible solutions for specific contexts while building legitimacy and support for such interventions. However, these participatory spaces and processes rarely tackle the unequal power relations between the parties involved¹⁸¹ and often suffer from a lack of diversity and representation of groups at the margins of the food system. Furthermore, in many instances these participatory processes fail to develop effective mechanisms to be accountable to the rest of society¹⁸². These elements are key to ensuring that these more collaborative forms of governance help democratise the food system and generate equity.

What can we do?

Education is key to transform the food system. It is important to include the principles sustainable food in the education and skill development programmes available in different sectors of the agrifood chain in order to obtain specialist knowledge in a given profession (e.g. training in agroecology), as well as to include them in a cross-cutting manner in different educational settings. For example in schools teaching nutrition and cooking skills, courses on reducing food waste in civic centres or campaigns on sustainable food for children through school visits to the Barcelona wholesale market (Mercabarna) or municipal markets. Examples of these cross-cutting actions include Barcelona City Council's *Escoles + Sostenibles* [+ Sustainable Schools] project, which consists of a micro-network of schools working on the subject of food waste, and the 2019 Summer School of the Barcelona wholesale market (Mercabarna) which also focused on this issue.

Non-formal and informal education settings also provide opportunities for sharing information about the food system and developing critical analytical skills to understand the links between food and the health of people, the planet and specific places. Examples in this line include specific campaigns on the effects of sugary drinks or different types of livestock farming which expand our knowledge on the interconnected nature of the food system¹⁸³. We all interact with the food system in different ways, and we can actively help educate people to make sustainable food a reality. There are many resources on these topics that provide the general public with regularly updated information and increase their food literacy¹⁸⁴.

In the process of transforming our cities to make sustainable food systems possible, it is crucial that we involve **people as social and political actors rather than as mere consumers**. This type of involvement can be encouraged in many ways. A good starting point is to carry out community food assessments to ¹⁸⁵ needs, identify the neighbourhood's strengths and weaknesses and co-construct more sustainable food spaces. These community-based approaches encourage the creation of synergies between local residents and the development of collective local initiatives for the neighbourhood, and contribute to food gentrification processes.¹⁸⁶ The development of more formal, and the creation of open and flexible spaces for wide participation and reflection. Other governance mechanisms include the establishment of specific roles, such as Baltimore's **residents' food equity advisors**, where members of the public advise the local government on food matters. These innovations on food governance must be designed to be inclusive and empowering and must result in actions that promote equity. Incorporating this sensitivity also entails logistical aspects, such as times and places for participation. There is a growing number of initiatives med at implementing the **'Nothing about us without us is for us'** principle that successfully change the perception of the food system, for example by explaining what it feels like to suffer from **food poverty** at first hand as a teenager and what valid solutions there are.¹⁸⁷ It is essential to include different voices because, as we have shown throughout this document, we are all connected through the food system and are therefore vulnerable in different ways, either because of its direct effect on our health, the effect of healthcare spending on public finances or its global environmental impact. Furthermore, involving people in the development of policies and actions provides evidence and knowledge that technical personnel do not have, gives rise to ideas for the development of effective solutions in real-life contexts and promotes empowering community-led processes with a political impact. The distribution of power and decision-making under which the food system currently operates is causing poverty, environmental degradation and disease.¹⁸⁸ Changing the way it is managed by increasing people's ability to make decisions about their own food is a key step towards a fairer and more sustainable future.

Notes

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- 35 According to La Via Campesina, food sovereignty is 'peoples' right to affordable, nutritious and culturally appropriate food produced in a sustainable and environmentally friendly way, and their right to decide on their own food and agricultural system'.
- 36 The text is structured in accordance with a problem-solution logic. There are many initiatives within the food system working to achieve sustainable food. These are listed generically in the section on solutions, where we have also provided some examples of good practices. Unfortunately, there was not enough room to include a wide range of good practices in progress in different places.
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- 48 For more information on the development of strategies to reduce food poverty and involve experts based on their experience, visit the Food Power project, which contains resources and case studies: https://www.sustainweb.org/foodpower/action/experts_by_experience/
- 49 There are various definitions of 'industrial or intensive agriculture and livestock production'. In this document, we have used the adjective 'industrial' and the definition given by the IPES-Food (2016:1) panel of experts. Industrial agriculture refers to 'the input-intensive crop monocultures and industrial-scale feedlots that now dominate farming landscapes. The uniformity at the heart of these systems and their reliance on chemical fertilisers, pesticides and preventive use of antibiotics lead systematically to negative outcomes and vulnerabilities'. IPES-Food (2016). 'From Uniformity to Diversity: A Paradigm Shift from Industrial Agriculture to Diversified Agroecological Systems'. Available at: http://www.ipes-food.org/_img/upload/files/UniformityToDiversity_FULL.pdf
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García, F. and Reina-Usuga, L. (2019). 'Análisis de las barreras legislativas y normativas para las pequeñas producciones artesanales en Andalucía'. Justicia Alimentaria VSF and Queserías de campo y artesanas. Available at: https://justicialimentaria.org/sites/default/files/docs/investigacion_barreras_legislativas_final.pdf
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