



THE POLICY ENVIRONMENT FOR SUSTAINABLE CITY REGION FOOD SYSTEMS (CRFS) - FACTSHEETS -



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The following document contains a collection of seven factsheets. Those factsheets provide an overview on EU and national regulatory framework conditions and policies, which are relevant for the development of sustainable CRFS. They present current constraints and challenges of CRFS in the respective policy field as well as examples, possible solutions and recommendations.

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PLANNING POLICY AND THE DEVELOPMENT OF SUSTAINABLE CITY- REGION FOOD SYSTEMS



Rooftop garden on the roof of AgroParisTech in Paris, France. Photo: Runrid Fox-Kämper

INTRODUCTION

Over the past two decades, interest in urban food production has grown worldwide and research on both classical peri-urban agriculture and innovations such as rooftop gardening and vertical farming to “feed the city” has shown potential for a much higher degree of self-sufficiency in vegetables, fruit and herbs than is currently realised – with multiple additional benefits for the urban microclimate and physical and mental health for urban dwellers. One of the obstacles that stand in the way of realising this potential in many European countries are spatial planning laws: they define quite narrowly what kind of activities are allowed on each piece of land and often restrict urban food production or urban agriculture activities within the city. E.g., the German Federal Land Utilisation Ordinance ([Baunutzungsverordnung](#)), originally enacted in 1962 and last revised in 1990, is based on the distinction between rural and urban areas, and defines which types of uses (residential, industrial, agricultural and leisure) are allowed in which area. The purpose of such ordinances is to arrange urban functions so that they do not interfere with or impede each other's function. Besides allotment garden areas, urban land use plans regularly do not include a category for agriculture or food production. Another aspect of urban planning law legislated by land use plans is the maximum number of floors allowed for new buildings.

CHALLENGES FOR SUSTAINABLE CRFS

In [most] European planning laws, “urban farming” is a contradiction in terms: commercial food production, whether soil-based or hydroponic, in the open air or in greenhouses or vertical farms, is defined as a rural activity, while urban areas are meant for housing, industrial uses and leisure. Urban residents are allowed to grow food for private or communal consumption in private and community-run gardens, allotments or in some places even on public land, but they are not allowed to market it. Under these conditions, urban farming remains a small-scale leisure pursuit with no potential for professionalisation or upscaling.

While green roofs have many advantages in terms of passive climate control, aesthetics and possibly social functions, it is not as profitable to construct a rooftop farm or garden instead of adding another floor of residential or office space - but this is often the choice developers are forced to make, as for example a greenhouse on the roof counts as a full storey according to the planning law. As long as developers have to “sacrifice” a significant part of their expected income from a new building in order to fit a garden, they are unlikely to do so.

The peri-urban horticultural areas that have played an important role in feeding cities throughout their history and that are vital to the development of sustainable CRFS are under pressure from urbanisation. Housing development and the expansion of business and industry, including relatively new phenomena such as very large data and logistics centres, and the new roads and other infrastructure they require, all jostle for space in and around cities. In many cases, even though brownfield sites would be available for redevelopment, it is much cheaper to start afresh on a greenfield site – which in most cases, means agricultural land.

EXAMPLE OF CHALLENGE

The German Federal Land Utilisation Ordinance ([Baunutzungsverordnung](#)) limits the opportunities for horticultural businesses and livestock production that are only allowed in villages, small settlements and mixed areas but generally prohibited in inner-city areas, industrial or residential zones. Businesses that process food are considered as “Trade” (Gewerbe), not as “Agriculture”, and are only allowed in business parks (“Gewerbegebiet”). This leads to a situation where small food growers who want to engage in value-adding activities literally have no place to set up their operation.

EMERGING INNOVATION

1. Enabling rooftop farming

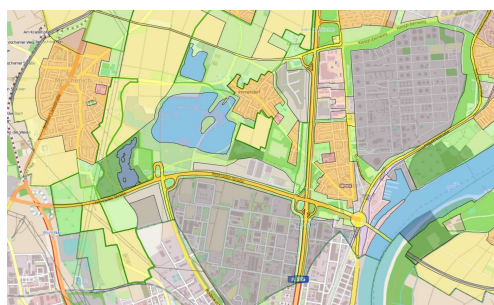
Cities can become active promoters to enable rooftop farming. Looking towards Paris and Bologna, both cities require green roofs on new public and private buildings. While Bologna’s [“Piano Urbanistico Generale”](#) (General Urban Plan) from 2021 does not extend to legislating for urban agriculture, the [Parisculteurs programme](#), started in 2016, has the objective to install 100 hectares of green roofs and walls, one-third of it for urban agriculture. Also since 2016, any building in Paris undergoing renovations or new construction over 100m² is required to have a green roof or rooftop farm. Any building over 5,000 m² must use the roof for urban farming specifically. The municipality of Paris further provides practical advice through their Urban Gardening Resource Centre ([Maison du Jardinage](#)) and has also produced detailed information material on rooftop gardens and farms – both on their [website](#) and in a separate [guidebook](#).

2. Encoding food production in urban planning

Cities can encode and thereby enable food production. In Bologna’s [General Urban Plan from 2020](#) the city makes provision for the promotion of both existing and newly founded agricultural enterprises with a wide range of activities within the city boundaries: “environmental, recreational and leisure services, social agriculture, catering and hospitality, land maintenance, educational farms, direct sale of fresh and processed agricultural products”. This includes allowing new construction of buildings “necessary for the management of agricultural land and for the exercise of agricultural and related activities”.

3. Safeguarding peri-urban food production

Where cities have jurisdiction over their horticulture belt, they can take direct steps to protect it from development. In many cases, these areas are spread out under several municipalities, making coordination and collaboration among the relevant cities and districts imperative. An example of this is the plan of the Bordeaux Métropole authority, with nine neighbouring municipalities, safeguarding the area known as the [Parc des Jalles](#).



Detail of [Zoning Plan, Cologne, Germany](#). Image: Stadt Köln

RECOMMENDATIONS

1. Create a land use category for “urban food production” that closes the gap in planning provisions to enable urban farming.

2. Enable and promote rooftop farming. Municipal governments are looking for ways to adapt their city to climate change and the heat and water stress it brings, and green roofs are one powerful part of the solution. Many cities have programmes providing planning advice and financial support for green roofs. Include a stipulation for food production, not just extensive greening, in projects above a certain size.

3. Change the definition of what constitutes an additional floor of a building to make it easier to realise the potential of built-up areas for adding rooftop greenhouses for food production.

4. Establish a central contact point for food production projects at the municipal level, in order to be able to implement and coordinate activities more efficiently, both on the part of the municipality and for private actors and small businesses. This central contact point can centrally record, process and implement all concerns and utilisation requirements.

5. Link the planning of green and open spaces to urban food production. Urban gardens and small food production enterprises can be integrated into existing or planned green and open spaces in order to provide CRFS initiatives with space, to provide visibility and educational opportunities, and to avoid conflicts of use.



AGRICULTURAL POLICY AND THE DEVELOPMENT OF SUSTAINABLE CITY-REGION FOOD SYSTEMS



[Fermes de Gally, Saint Denis, France.](#) Photo: Véronique Saint-Ges

INTRODUCTION

The policy environment for agriculture in Europe has been shaped to a very large extent at the EU level since the first enactment of the [Common Agricultural Policy](#) (CAP) in 1967, with national and regional governments' role largely confined to making decisions on its local implementation. The CAP, last reformed in 2021, continues to be the most impactful agricultural policy in Europe, with deep repercussions around the world. It is the single largest item in the EU budget, accounting for 33% of total spending (€ 55.71 billion) in 2021. In 2019, more than 80% of this (most of what is known as "the 1st pillar") was spent in direct payments to farmers, which are predominantly based on the size of their landholding or animal herd. This results in a heavily skewed distribution of the funds: the great majority (75%) of farms received €5,000 or less in direct payment in 2019, while the largest 1,93% of farms received more than € 50,000 each. Rural farmers with very small holdings, below the so-called "minimum requirement" (0.3 to 5 ha, depending on the country) and farms in urban areas are not eligible for any direct payments at all. Furthermore, the so-called 2nd pillar, containing [€95.5 billion or 24,7 % of CAP funds in 2019](#), is meant to support "a thriving rural economy" and a variety of measures to make agriculture more sustainable. However, [numerous evaluations of successive versions of the CAP](#) – most recently the [European Court of Auditors in May 2022](#) - have found that for all the rhetoric and dedicated funds, the desired effects on climate change mitigation, biodiversity, soil and water protection have not materialised, while both the overall number of farms and people making their living in agriculture has been falling for decades.

CHALLENGES

Current agricultural policy and support strictly separate rural areas (production) and urban areas (consumption)

The distribution mechanism for direct payments thus favours large, commodity-focused land holdings and factory farms whose production is oriented towards the global market and the food industry. On the other hand, the types of farms that benefit least are the smaller, more diversified operations that are actually the underpinning of a sustainable city-region food system: they are more likely to produce food for the local market, as regional marketing is more profitable for relatively small quantities of food meant for direct consumption than for large, specialised farms with high production volumes. Primary food producers in the urban centres are excluded from support altogether, both for their location and for their lack in size.

Current agricultural policy and support exacerbate disadvantages for small producers

Small farmers are doubly disadvantaged by the CAP and the market situation it has created – not only do they receive only minimal support, if any, but they also suffer from the market distortion that results from massive financial support exacerbating the existing economies of scale: in comparison to their product, industrial food becomes even cheaper and more difficult to compete with.

EXAMPLE OF CHALLENGE

The experience of the “[Jardins Inspirés](#)”, located in the “horticultural valley” (“La vallée maraîchère”) near Bordeaux, France is illustrative of many of the challenges small European peri-urban farmers face, and also of some of the emerging solutions through new forms of organisation, partnership and support. It is a very small operation (just 0,5 ha) but at the same time highly diverse in its products and services: they include biodynamic vegetable production for the market, but also educational activities for both adults and schools, and agro-biodiversity conservation through in-situ conservation and a seed bank of heirloom (“peasant”) varieties of tomato and other vegetables. While all their products and services are appreciated and in demand the owner has had difficulty in maintaining the farm due to insecure land tenure, which has led to several short-term moves. She has also had difficulty in finding a suitable organisational form to accommodate these very different types of economic and social activities. Ultimately, two kinds of legal entity were created – a “for-profit” farming operation for all commercial activities and a non-profit association for the educational services.

In order to ensure the long-term existence of the farm, three surrounding municipalities, Bordeaux, Eysines and Blanquefort are providing various kinds of support – funding the education programme, giving advice and administrative support for participating in public tenders, and setting up the infrastructure for the seed bank.

EMERGING INNOVATION

1. Shifts in public purchasing

Many cities are boosting demand for regional, sustainable food by focusing their public food purchasing accordingly – see e.g. the members of the [German Organic City Network](#) or of [ICLEI's Buy Better Food Campaign](#).

2. Land access and subsidies at city level

Cities can become strong partners in providing land access and subsidies for small-scale farming. For example, cities that own agricultural land increasingly decide to make it available specifically for small, agroecological producers (e.g. Sabadell, Madrid, Bordeaux Métropole). The municipality of Ljubljana pays a direct subsidy to small farmers in and around the city.

3. Municipalities as networking facilitators

Municipalities become facilitators by encouraging their citizens to take an interest in food production through networking and awareness-raising activities. This happens for example in Eysines, France, on the outskirts of Bordeaux, with the annual “Raid of the Vegetable Farmers” (“[Raid des Maraîchers](#)”), a programme of hikes, bike rides and organised visits to the farms. In Lansingerland, Netherlands, commercial greenhouse agriculture plays a strong role in the local economy and the municipality helps to set up partnerships between local farmers and schools for educational activities.

4. Urban agriculture departments at city level

The municipalities of Ljubljana and Bordeaux-Métropole have a dedicated department for agriculture, while the city of Hanover in Germany formulated an “[agriculture programme](#)” for the first time in 1994. While this remains the exception, many cities have formulated food strategies with a vision, goals and concrete measures for strengthening their local sustainable CRFS. Market places have existed in cities for centuries but recently, there has been renewed focus on providing spaces specifically to local producers (e.g. in Bologna).

5. Edible cities

The idea of the “edible city” has caught on in many places, and citizens are getting access to space for growing their own food all over cities, on the rooftops of public or private buildings, former car parks and wasteland or even in public parks (e.g. in Paris through the [Parisculteurs programme](#), in Cologne’s “[Garden Laboratories](#)” or in the “[edible city](#)” of [Andernach](#), Germany).

RECOMMENDATIONS

1. Facilitate access to funding and other support by reducing the bureaucratic hurdles and opening up programmes for very small, as well as urban-based operators.

2. Provide public support to small and highly diversified farms in dealing with bureaucratic hurdles related to taxes, access to funding and other issues.

3. Integrate the goals of transition towards more regional production and to sustainable production systems into policy-making on all levels. Strong regulations and standards are needed in combination with education, technical advice and financial support that enable producers to make the investments needed and convert to sustainable practices.

4. Focus agricultural subsidies on producers who are creating public goods in terms of environmental and social sustainability, rewarding e.g. ecological farming practices, fair employment and contributions to education rather than sheer size.

5. Ensure fair market conditions for European producers who conform to high environmental, social and animal welfare standards through supply chain legislation.



EDUCATION POLICY AND THE DEVELOPMENT OF SUSTAINABLE CITY REGION FOOD SYSTEMS



Photo: Chiara Cirillo.

INTRODUCTION

At a time when more farmers and small food producers in Europe are retiring every year – [“in 2016, for every farm manager under 40 in the EU there were three farm managers over 65”](#) – academic and vocational education systems are struggling to provide prospective entrants with the knowledge and skills they need to succeed in the demanding environment in which they will operate. The education they receive is still focused on growth and intensification, in a situation where this production model is already reaching its limits. In a traditional agricultural system, children learn to farm from the moment they can walk, following their farmer parents and acquiring the necessary knowledge. For adults who did not grow up on a farm and decide to become a farmer, it can be a challenge to get adequate and sufficient training. Many details of sustainable farming are site-specific and based on experience. National governments often have agricultural universities or vocational schools, and regional governments are known to support farmers by providing advice on specific farming issues. However, there are still gaps when it comes to bringing potential farmers up to speed quickly enough so that they can be successful and their business model is not hindered.

CHALLENGES FOR SUSTAINABLE CRFS

Challenges exist especially in the area of general agricultural education, but also in the area of vocational training for food crafts and in food technology education. Many university courses are focused on specialisations or research and do not offer practice-oriented programmes. In addition, agriculture is a political business - there are many different opinions on methods and best practices, especially when it comes to “sustainable agriculture”. Agriculture and food trade curricula still focus on scaling up, mechanisation and industrialisation as a path to success, while many aspiring food producers have a very different mindset and aim for small-scale, artisanal, often low-tech production for a local market. It can be difficult to find quality, locally relevant information. In addition, not all students have the same access to the infrastructure or machinery used in their education. Well-educated farmers and food craftspeople are essential for implementing technical, social and environmental innovations.

EXAMPLE OF CHALLENGE

In Germany, most agricultural training courses, both vocational and academic, focus heavily on technological innovations in production, but do not cover social or economic innovations such as new forms of regional marketing or community-supported business models (CSX), which could actually be a better path to sustainable livelihoods. In Italy, there are many opportunities to create and get funded training courses for professionals and technicians in agriculture, for example under the regional Rural Development Programmes (such as the one from [Campania](#)), but not so many for potential new small farmers and agri-entrepreneurs.

EMERGING INNOVATION

1. Grassroots Initiatives

Grassroot initiatives offer informal advisory services. For the case of community-supported agriculture (CSA) in Germany, the [CSA network](#) offers a structured peer learning programme that enables new and aspiring CSA founders to learn from the collective experience of the more than 350 CSAs in the network. A functioning CSA differs in many ways from a regular farm, so the range of topics extends from highly diversified vegetable production to legal and financial aspects to social processes in prosumer groups.

2. Incubation Programmes

Incubation programmes can be a quick way to learn the best practices needed to start a CRFS project. These programmes often provide training in an informal setting over several weeks or a growing season. They are usually structured as a series of "crash courses" where participants learn best practices in a short period of time on topics such as business model, marketing and sales, farm planning or best practices for season extension. A [course like](#) this, as for example offered by [Nabolagshager](#) in Oslo, Norway, can be an excellent opportunity for aspiring farmers to network with each other and share experiences and problems.



CSA field visit, Cáceres, Spain. Photo: URGENCI

3. Innovative vocational training

Innovative vocational trainings can also be organised by cities or municipalities. For example, the City of Paris has been running the School of Horticulture and Landscaping ([École du Breuil](#)) since 1867, which offers a wide range of training courses in the field of urban agriculture and gardening – from full-time trainings such as the *Brevet Professionnel* option [Responsable d'Entreprises Agricoles - spécialité "Fermes agroécologiques urbaines et périurbaines"](#) (technical college diploma in agricultural business management with specialisation in agroecological farming in urban and peri-urban areas), to further education modules for professional gardeners and one-day introductory courses for interested citizens.

4. Innovative academic education

Academic institutions are increasingly engaged in new education programmes related to food systems and urban agriculture, which, in addition to traditional knowledge transfer, include the training of professionals with specific skills on: sustainable primary production techniques; sustainable approaches to crop protection; sustainable models and approaches such as the circular economy; sectoral policies, regulations and economic aspects related to innovations aimed at the ecological transition; the sustainability of food and consumption; waste management and energy production from renewable resources and sustainable methods and technologies in food processing and packaging.

The University of Naples is developing a new degree course focused on Food Systems that will include practical elements such as trainings specifically dedicated to a business case study and a sustainability boot camp, helping students to develop skills that can be immediately useful for integrating sustainability into businesses operating in the agri-food sector, or even for developing new sustainable local food systems. It is not yet online but will be organised along similar lines to the ["Green Management and Corporate Sustainability"](#) course offered at Bocconi University in Milan.

RECOMMENDATIONS

1. Diversify academic and vocational training programmes to include environmental and social aspects and give students the opportunity to follow the "small-scale" and "up-scaling" pathways.

2. Offer training courses at local plant nurseries for interested students to gather and develop hands-on horticultural skills and activities and also to learn about new regional horticultural crafts in the agri-food sector. In addition, this will make it easier for professionals and students to interact.

3. Create differentiated training pathways in academic institutions for urban agriculture that deal comprehensively with urban agriculture and all its fields, and are not just a subcategory of an already existing training pathway.

4. Include innovative business models, including solidarity-based approaches, in both agricultural and food craftsmanship training courses.



CIRCULARITY AND THE DEVELOPMENT OF SUSTAINABLE CITY-REGION FOOD SYSTEMS



[Roof Water-Farm](#) hydroponic greenhouse, Berlin, Germany. Photo: Grit Bürgow.

INTRODUCTION

Sustainable City-Region Food Systems have great potential to contribute to the transition to a circular economy. They could help close resource loops for a number of crucial resources

- which are becoming increasingly scarce - e.g., freshwater - and
- which are highly destructive to extract or produce - e.g., nitrogen, phosphate and potassium from fossil sources, animal feed such as soya produced on deforested land – or
- which are currently a waste product but could be converted into a resource - e.g., heat from buildings contributing to urban heat stress, or food waste from catering and other sources that are currently “downcycled” for biogas or even disposed of altogether.

The European food system in its current form is in many ways the opposite of a circular system: it relies heavily on fossil resources, water and inputs from deforested land imported from around the world into Europe, where the final product and associated waste are produced. The long transport distances make it impossible to close these resource loops and create problems at both ends rather than solutions within a loop. In theory, City-Region Food Systems have a very high potential to function as a more circular system than the current globalised food system, but certain regulations or even the lack of such regulations at EU and national government level prevent further development in this direction.

CHALLENGES FOR SUSTAINABLE CRFS

EU regulations on wastewater recycling for urban agriculture

For the grey and black water recycling sector in (urban) agriculture, there is a new [EU regulation on minimum requirements for water reuse](#) (2020/741), which was adopted in May 2020 and is currently being processed by member states for national implementation. This could open up new opportunities for greywater recycling to play a greater role in the CRFS if treatment and hygiene control requirements and permitted uses are formulated in such a way that smaller plants can demonstrate safety through treatment processes that are described as safe; rather than, for example, weekly laboratory testing. Another policy element that is missing for widespread implementation of this practice is the creation of incentives and possibly mandatory separate collection of grey water in new buildings and renovations of buildings above a certain size.

EU regulations on animal feed

Another area where waste streams could be turned into a valuable resource if the policy environment allowed it is animal feed. The regulation on animal protein (commonly known as the “[Feed Ban](#)”), adopted in 1994 and extended in 2001, which prohibits the feeding of any type of animal protein to certain farmed animals was [amended in 2021](#) to allow the use of seven different species of insects as animal feed. However, the restrictions on what the insects themselves may be fed remain in place and preclude the use of kitchen waste and other potential sources of insect feed that would make insects a sustainable option by reducing the need for agricultural land for animal feed.

EXAMPLE OF CHALLENGE

The worsening freshwater crisis in many countries shows that water recycling is urgently needed. Technologies for small-scale greywater recycling, including monitoring and treatment systems are available and have been proven successful in both soil-based agriculture and in vertical farming systems based on hydroponics. Nevertheless, the policy environment for the implementation of this innovation is not yet in place. An example of this situation is the “[Water House](#)” in Berlin, which was developed and operated by [Nolde and Partner](#) for environmentally conscious developers and built as a “lighthouse project” with partial state funding. Proven safe and hygienic, it recycles up to 10 m³ of grey water to irrigate residents’ gardens; allotments and a hydroponic greenhouse, and to supply toilets for 73 households. On the small scale on which it currently operates, it is more of an enthusiast proposition than a profit-seeking business.

EMERGING INNOVATION

1. Advantages of physical proximity

A locally integrated food economy - from farm to table to waste disposal and recycling - reduces transport costs, so that a resource cycle can be the more economical option. The food system can be interwoven with the urban fabric and other social and economic activities in the city by bringing together actors of different parts of the system and improving synergies more easily. This also includes a closer relationship between consumers and producers, creating a basis for greater awareness, respect and solidarity, leading to more sustainable consumption choices and/or active engagement as prosumers.



Greywater treatment plant at [Water House](#), Berlin, Germany.
Photo: Erwin Nolde.

2. Savings on infrastructure

The small-scale, highly localised use of treated greywater typical of a CRFS would not require a large upfront investment to build a separate wastewater system. Instead, a very large waste stream would be treated at its many points of origin and converted into a valuable resource that could also be used directly on site (or in close proximity), both for urban food production and for irrigation of parks and green roofs.

3. Nutrient recycling

A complementary approach that focuses on diverting nutrients from wastewater before they become pollutants is demonstrated by the start-up [TOOPI](#), based in Bordeaux, France. Working with organisers of large events and using specially-designed toilets, urine is collected separately and fermented to make it safe and hygienic, creating a valuable source of fertilizer for agriculture that is both cheaper and more effective than synthetic equivalents. TOOPI has received funding from the French [Agency for Ecological Transition](#) to take their process from proof-of-concept to implementation at scale, building processing facilities and a network of partner institutions in several French cities.

4. Food waste upcycling

Similarly, the production of insects as a sustainable, high-value animal feed with the potential to replace destructive soy and fish meal, and also for human consumption, using catering and other waste products has been practiced in many parts of the world. Various aspects of insect production for food and feed have also been the subject of research by the [FAO since 2003](#) and by European research institutions such as [Wageningen](#) University for about a decade.

RECOMMENDATIONS

1. Raise awareness of the need to use resources more sparingly, including freshwater, and disseminate information on the circular economy to the general public.

2. Implement regulations for the use of grey water in agriculture with provisions for use in typical urban crops and for safety control systems suitable for small farms.

3. Make separate greywater collection in all residential buildings above a certain size a legal requirement, combined with a support programme. (A model for this lies in the renewable energy programs such as the German 1,000 Roofs Programme and the [Renewable Energy Sources Act \(EEG\)](#), which kick-started decentralised solar energy generation in Germany).

4. Legalise the use of kitchen waste and other waste products that have been proven to be both safe and sustainable for use in the production of insects for animal feed.



FOOD SAFETY POLICY AND THE DEVELOPMENT OF SUSTAINABLE CITY- REGION FOOD SYSTEMS



Photo. FoodE photo library

INTRODUCTION

Food safety is one of the most important regulatory arenas of the food system. Maintaining a healthy and safe food supply for citizens is a huge undertaking that comes with an equally large number of rules and regulations. As the FoodE project focuses on smaller-scale producers, many of these initiatives have expressed difficulties in understanding food safety rules, gaining approval of food safety authorities, and obtaining infrastructure needed to follow food safety guidelines. There is also the opposite extreme, where locally and traditionally grown food from small businesses have a better reputation to consumers, despite being, in many cases, less regulated and less systematically controlled than larger retail and imported food (Herman et al., 2012; Pussemier et al., 2012). Creating a better policy environment that accommodates smaller producers who do not have access to large start-up capital is essential if we want to maintain food safety standards on a small-scale.

CHALLENGES FOR SUSTAINABLE CRFS

Starting a small food production business is hard enough in terms of obtaining the proper skills and resources. However, figuring out how to comply with food safety regulations designed for industrial production is equally, or even more challenging. With the emergence of many sustainable small-scale producers across Europe focusing on the local market, finding their place within food safety regulations has proved challenging. Food safety regulations have different implications for businesses from large to very small. Larger companies have dedicated staff and other resources to develop a separate team to coordinate implementation of the regulatory requirements to be compliant. However, this approach has proven effective for large companies, but for those that fall into the small and very small categories this approach is challenging. As many of these producers are pioneering either new technology or new production methods, it can be difficult to obtain best practice case studies from government authorities. Many food safety regulations require encompassing infrastructure for cleaning or packing food, knowledge of new farming practices (for example, integrated pest management) and improved supervision of labour on the farm, as well as greater capacity for record-keeping and documentation of decision-making. This has proven to be a barrier for small-scale producers who operate with little start-up capital and have developed business models that will never reach the scale to justify such investments in infrastructure. Finally, growing food in urban areas is also a challenge as it poses new risks that are not present in rural production systems.

EXAMPLE OF CHALLENGE

[Nabolagshager AS](#), a social enterprise based in Oslo, Norway began experimenting with rooftop farming in 2017. After building a demonstration garden on a rooftop in the centre of Oslo, the group moved to develop business models that could ensure financial sustainability of the project while creating jobs for the local, minority youth. The most logical business model was the sale of vegetables and herbs grown on the rooftop to local restaurants and consumers.

A number of challenges quickly arose with this model. The first was that the rooftop was not private, but rather open for the public. This made it impossible to ensure that the food did not come in contact with other people who did not follow best hygiene practices.

Another challenge was the lack of infrastructure for post-production processes. Without professional sinks, fridges and packing rooms, Nabolagshager was unable to comply with the current food safety regulations. However, the scale of production did not justify the level of infrastructure investment required under the current regulatory framework.

Another example of a specific policy that creates a challenge is the [German Foods, Consumer Goods and Feedstuffs Code](#) (LFGB), enacted in 2005. It ensures compliance with hygiene standards in food production and includes regulations on production, storage, processing and preparation, separation of the means of production from the products when storing different products and on all transport routes. In addition, a specific legal permit (health certificate) is mandatory for the persons processing the products. This is legally enforced through regular controls and has a negative impact on urban agriculture as it is difficult for small businesses to comply with.



Photo: Canva.com by Alex Rath.

EMERGING INNOVATION

1. Digital innovations

As [proposed by FAO](#), advances in digital innovations can enable more affordable periodic testing for early detection of foodborne pathogens and improve traceability mechanisms to identify and remove contaminated products.

2. Collective action

Development of collective actions at different points of the agricultural cycle for meeting food safety challenges may enable the group to achieve economies of scale that would be unavailable to individual producers, as proposed by [Humphrey \(2017\)](#).

3. Training and other support

Support should be given to smallholder farmers and other small-scale food producers, processors and traders, given the disadvantages they face with respect to scale, finance and capabilities. One possible solution are training programmes, another is the provision of support services to help with implementation of food safety systems and especially, with compliance to administrative procedures (these could be provided by governments, development agencies or business organisations).

4. Policy adaptation

The EU Commission issued a "[Notice providing guidance on food safety management systems for food retail activities](#)" in 2020, acknowledging that existing food safety regulations are not adapted to the situation of small-scale producers and providing for some simplified procedures. This being a very recent change, it remains to be seen if and how it will be implemented at the local level, and whether it will have the intended effect.

RECOMMENDATIONS

1. Adapt food safety regulations to take into account smaller-scale and innovative producers who are working in new arenas such as vertical farming or urban agriculture.

2. Simplify food safety management for small operators. The European Food Safety Authority (EFSA) has [proposed a simplified approach](#) to food safety management in small retail businesses such as grocery shops, butchers, and bakeries. The approach includes guidelines on how to identify the most relevant biological, chemical and physical hazards at each stage of the food production process, the activities or practices that make hazards more likely to occur, and appropriate control measures.

3. Simplify control systems. Burdensome bureaucratic processes and technology prescriptions need to be adjusted to address the situation of small-scale producers. Doing so will help these sustainable food production organisations maintain good practices for consumer safety while also producing at a scale that better fits emerging business models.

4. Provide subsidies, training and administrative support to reduce the cost of capital investment and certification to small-scale farmers and other urban food producers.



POLICY SILOS AND THE DEVELOPMENT OF SUSTAINABLE CITY-REGION FOOD SYSTEMS



Image: iStockphoto

INTRODUCTION

“Food” is one of the most multifaceted aspects of human society, and is being shaped by policies in the health, agricultural, economic, social, environmental, labour, trade, urban development and educational sectors as well as the collaboration (or lack thereof) between cities and rural districts, between municipalities, regions and national governments, and between all sectors of society. The food system is also a major driver behind some of the greatest challenges human society is currently facing: it accounts for $\frac{1}{3}$ of greenhouse gas emissions, is the biggest single cause of biodiversity loss and soil degradation, human and animal rights abuses are systemic, while over-, mal- and undernutrition are among the leading causes of premature death and disease globally. This would call for an integrated approach - however, policy making and governance more generally are sharply compartmentalized in terms of policy areas (silos), both geographically, and between the different levels of government. This applies to the EU itself as well as to every other government level down to the municipalities. Numerous reports and resolutions, from within European institutions [and outside](#), have identified this governance process as one of the greatest obstacles for a food systems transformation aimed at replacing globalised structures and unsustainable production models with a more diverse, regionalised, sustainable food system.

CHALLENGES FOR SUSTAINABLE CRFS

The current food system and its policy environment are the result of numerous political decisions taken separately, over several decades, in different policy fields such as agriculture, trade, social, and labour regulations. This has resulted in shifting the European food system towards full commodification, enhancing the primacy of large over small companies, uniformity over diversity, and separation and competition rather than collaboration between stakeholders. Building a sustainable CRFS requires fundamental change after having reached this state. This cannot be achieved in the way that traditional siloed governance works - incremental and largely disparate changes made in separate policy arenas - but requires a whole-system view and concerted and coordinated action by all actors and at all levels. Otherwise, the deep contradictions between the existential needs and interests of different stakeholders will derail the process -

- contradictions such as:

- Developing short food chains built on a great diversity of small, local operators - while long-distance transport is subsidized and the majority of financial support goes to large operators and towards further upscaling.
- Moving towards true cost accounting and the resultant higher prices for farmers and other food producers in order to reward those producing and preserving public goods, while [8.6% of Europe's population lives in food poverty](#) and there is no accompanying social policy in place to ensure access to food for all.
- Food being treated like any other commodity under the EU open market rules, putting a break on municipalities and regional public authorities who want to introduce sustainable and regional purchasing criteria, one of the great levers for setting a local food system transformation in motion.
- Encouraging young farmers to enter the profession while they are being priced out of the land market due to the effects of fiscal and development policies.

EXAMPLE OF CHALLENGE

A [recent analysis](#) by the European Commission showed how agricultural and climate policies are siloed and therefore incoherent. They found that Voluntary Coupled Support (VCS) is provided to support the production of fruits and vegetables, cotton and rice in Andalusia, whose production drives overexploitation of water resources. Furthermore, direct payments are given for agricultural activities on peatland/ wetland, with no conditions for limiting damage (which results in high levels of GHG emissions). And measures for forest investment are potentially incoherent with market stability and food security as afforestation potentially converts land from agricultural uses into forests.



Executive committee of the FPC for Upper Franconia, Germany, representing all parts of the food chain. Photo: Andreas Harbach

EMERGING INNOVATION

Setting food policy was not a traditional role of cities, with food provision left primarily to the market under a policy environment determined by the higher levels of government. However, cities all over Europe, as well as in other parts of the world, have realised that they can play a key role in the transformation towards sustainable city region food systems, that this calls for new modes of setting policy, and have started creating new structures and approaches to this aim.

1. Local, regional and national food strategies

In many cities, regions and countries, sustainable food strategies, often developed in a participatory process, have proven to be powerful catalysts for creating a shared awareness and vision, a coherent set of mutually reinforcing policy measures as well as a network of actors committed to their implementation (see for example [France's National Food Plan "The Regions in Action"](#) from 2019, Wallonia's ["Manger Durable"](#) strategy from 2018 and Norway's [National Urban Agriculture Strategy](#) from 2021 - the German state of [Brandenburg](#) has just started its strategy process in 2022).

2. Improved coordination of food issues

Some municipalities and regional governments, including Turin (Italy), Bordeaux (France), Cologne (Germany) and the Belgian province of Wallonia have created offices of "food policy coordination" within their administrative structure, charged with coordinating the activities of all relevant departments and stakeholders and driving the implementation of their food strategies.

3. Food policy platforms

Collaborations between cities and their neighbouring rural districts on land use planning and joint food infrastructure development such as the ["Eco Model Regions"](#) in several German states, or between cities, research institutions, regional and national government in joint food policy projects such as the Dutch ["City Deal Voedsel"](#) have been successful in putting the food system on the agenda and creating momentum for transformation on the ground. Food policy councils, multi-stakeholder platforms for food systems change, have emerged in more than [100 European cities](#), mostly at the instigation of civil society but with the active participation of local governments and actors from the food value chain, and have played a crucial role in creating a space beyond the walls of sectors and silos. These local Food Policy Councils have started creating regional networks to replicate the effect at higher government levels, but this process is still in its early stages.

RECOMMENDATIONS

1. Create either integrated food policies, or apply a „food in all policies“ approach - with the collaboration of all relevant departments and stakeholders.
2. Create institutions for cross-departmental and cross-sectoral collaboration on food policy at all levels of government, where all relevant departments and stakeholders sit at the table.
3. Use these new structures to formulate a coherent vision of a desirable future and develop detailed, measurable strategies for how to get there.
4. Move away from treating food purely as a commodity and frame it in terms of human rights and public goods.



FISHERIES POLICY AND THE DEVELOPMENT OF SUSTAINABLE CITY- REGION FOOD SYSTEMS



La Restinga, El Hierro, Spain. Photo: Jose Pascual-Fernández.

INTRODUCTION

The EU Common Fisheries Policy provides a general regulative framework for European fisheries. The European Commission sets the total allowable catches (fishing quotas) for each member state, which are then allocated by those states to specific fleets. It also allows differentiation in control systems between large-scale, small-scale, and recreational fisheries, leaving it up to each member state to set some of the rules and procedures for monitoring and enforcement. This has resulted in different approaches to the management of small-scale fisheries in different countries, with some countries more likely than others to allow local fisheries to participate in sustainable CRFS. Access to fishing opportunities and quotas has often disadvantaged small-scale fisheries. This fact sheet uses the case of the Canary Islands to illustrate the situation.

CHALLENGES

Tuna fishing for export has a long history in the Canary Islands, dating back to the early 19th century. Local small-scale fishers in Spain are organised in *cofradías* (fishers' associations) to control the first sale of the catch and to regulate a variety of issues related to fishing, such as proposals to regulate fishing gear in order to achieve sustainable use of resources. In some Canary Islands, *cofradías* also manage the marketing of the catches. They compete for resources with both large-scale and recreational fishers and face a number of policies that disadvantage them:

Small-scale fleets in the Canary Islands have received only a tiny share of the fishing quotas for Atlantic Bluefin and Big Eye tuna, despite the fact that these species have been caught in the archipelago in the past, the fishery is of socio-economic importance and the pole and line fishing technique has a favourable environmental balance. Atlantic Bluefin and Big Eye Tuna are two very high-value species from which Tenerife fishers traditionally make a living and which add considerable value to the local economy.

Large-scale fleets have traditionally been able to lobby for favourable conditions; subsidies and advantageous fishing quotas increase their profitability. In addition, the high fishing capacity of industrial tuna fleets in the open sea using fish aggregating devices (FADs) and unsustainable fishing gear such as large purse seine nets with a high proportion of small catches can affect tuna stocks, impacting the viability of artisanal fleets that depend on these resources.



Photo: Jose Pascual-Fernández

Competition from industrial fleets, imports and illegal products, and new consumer trends pose major market challenges for small-scale fisheries. Developing strategies to improve the value and market position of fishery products from artisanal fisheries is crucial to ensure the long-term viability of artisanal fisheries. It is necessary to differentiate the local product from those of industrial fleets or imports from other parts of the world and to take advantage of new commercial opportunities, such as alliances with the restaurant sector or new customer segments interested in sustainable city-regional food systems. Strong organisations are needed to develop new marketing strategies.

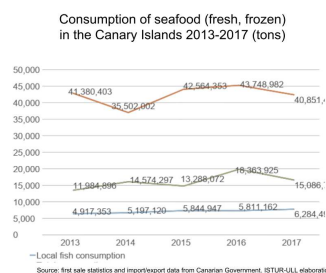
EXAMPLE OF CHALLENGE

The World Health Organisation recommends a daily intake of 500 mg of omega-3 fatty acids which can be obtained mainly from certain organisms of aquatic origin. While in Spain citizens aged 65 and over consumed on average almost 19 kilos of fresh fish per capita in 2020, the figure for younger people under 35 was just four kilos. Notwithstanding the traditional attachment to the sea, fresh fish consumption in the Canary Islands is only half the Spanish average. Furthermore, the overweight/obesity rate among school-age children in the Canary Islands is over 44%, one of the highest in Spain. Meanwhile, 80-90% of tuna catches (six species) in Tenerife are exported raw (6-9000 tons a year), while thousands of tons of frozen tuna loins are imported. The consumption of frozen and fresh fish in the Canary Islands can be estimated at over 40,000 tons a year. Between 9 and 17% of that amount is from local sources (estimated at around 5,500 tons). At the same time, almost three times the local consumption is exported (more than 15,000 tons). Better use of local seafood resources in the Canarian markets is strongly needed.

EMERGING INNOVATION

A government policy focused on strengthening fisheries organisations would enable them to develop the necessary capacity to take advantage of new processing and marketing opportunities in response to new trends among local consumers.

These measures should first include the development of processing facilities on each island to transform raw fish into cuts that are in demand locally and to preserve a large proportion of these cuts through freezing. The products of artisanal fisheries must be clearly distinguishable from those of the large fleets, from other world markets and from illegal products through publicly controlled labelling. Information campaigns and education in schools and universities can be used to promote local fish consumption. The pilot project by Islatuna, the University of La Laguna and other FoodE and local stakeholders and partners in the FoodE project has shown that projects involving different actors to link local producers with local consumers can improve the profitability of the sector and the sustainability of small-scale fisheries. Taken together, these measures would add value to local seafood catches, increase the number and quality of jobs related to local seafood processing and distribution in the archipelago, and help restore local cultural ties with local marine resources.



RECOMMENDATIONS

1. Establish an appropriate quota allocation for the main tuna species for the artisanal fleet of the Canary Islands, taking into account historical catch levels and socio-economic importance, in order to promote the viability of the artisanal fleet in the Canary Islands.
2. Improve the capacity of local fisheries organisations for collective action and marketing opportunities, including the establishment of processing facilities on each island.
3. Establish a legal framework that reflects the reality of artisanal fisheries.
4. Promote artisanal fisheries to foster food security, secure employment and livelihoods in coastal areas and contribute to the conservation of local maritime heritage and the protection of the marine environment.
5. Reduce fish imports to measurably reduce the carbon footprint of the food supply in the Canary Islands.
6. Involve public administrations in developing appropriate policies and legislation. Public institutions should invest in human capital and collective action in the fisheries sector to effectively manage this change.