



# 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 the potential of 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 on climate in urban areas 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 E.g., the German Federal Land Utilisation Ordinance ([Baunutzungsverordnung](#)), originally enacted in 1962 and last revised in 1990, is based on the distinction between rural and urban areas, and defines which types of uses (residential, industrial,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, the land use plans regularly do not include a category for urban agriculture or urban 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.



Detail of Zoning Plan, Cologne, Germany. Image: Stadt Köln

## EXAMPLE OF CHALLENGE

The German Federal Land Utilisation Ordinance ([Baunutzungsverordnung](#)) limits the opportunities for horticultural business and livestock production that are only allowed in villages, small settlements and mixed areas while it is in general not allowed 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 100m<sup>2</sup> is required to have a green roof or rooftop farm. Any building over 5,000 m<sup>2</sup> 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 building “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 district 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](#).

## 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.