

BENEFITS OF URBAN AGRICULTURE



The Benefit Leaflets

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The benefit leaflets highlight the key benefits of Urban Agriculture (UA) to guide policy makers in the planning and management of urban and peri-urban agriculture. They include a description of the key benefits of urban agriculture, as well as the main points of attention in order to check for possible unintentional effects.

Based on the consultation of EFUA partners, the literature review and considering the main urban policy targets, five categories of UA benefits related to different dimensions of sustainability were identified:

- socio-cultural,
- environmental and climate,
- food,
- health and well-being and
- economic.

Each benefit category is illustrated by examples and visual representations of some good UA practices to address cities' demands and achieve urban policy targets.

This document presents an abstract of Task 3.2 " Understanding the benefits of UA" (Lead: Politecnico di Torino). The full results were illustrated in the Deliverable 3.2 "Type-benefit matrix, including set of indicators, and benefit leaflets". Authors: Cassatella C. and Gottero E., April 2022. The text of benefit leaflets are based on the list of benefits (Section 3.1.2). For any further details about benefits and unwanted effects, as well as references, please refer to Section 3.1.2 and Annex 4 of D3.2.

Unless otherwise indicated, the text of the selected good practices included in this document is based on information from the EFUA website and the photos are showcased on the EFUA website and they can credit to the projects responsible. The picture of the Agricoopecetto was kindly provided by Elena Comollo. The photo of the DAM was kindly provided by Giacomo Pettenati, while that of the Blizkata Ferme was kindly provided by the Blizkata ferma and Dona Pickard.



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<https://www.efua.eu/>

Socio-cultural benefits of urban agriculture



Urban food gardening, particularly DIY gardens, community parks and gardens, can strengthen the interaction and networking between people, can contribute to strengthen feelings of belonging, **sense of community, sense-of-place**, as well as place attachment, especially through the cooperation and participation of several stakeholders. Urban food gardening can also contribute to foster the collaborative approach between gardeners, citizens and municipalities. Urban food gardening and social farms can also contribute to reducing discrimination, **improve social inclusion** and achieve gender equality, involving different social and cultural groups in the management and use of urban spaces.



The social activities offered by UA, particularly DIY gardens, community parks and gardens, as well as social farms, can increase food literacy and **knowledge, skill-building and education** on food, nutrition and diets. Urban food gardening, particularly school gardens, can contribute to strengthen the environmental awareness and values of people. Some production and selling systems, such as zero acreage farms, rooftop gardens and greenhouses, can also contribute to developing **consumer awareness**.



Urban farming and gardening can contribute to create new forms of **recreation activities**, to improve the **quality of spaces** for recreation, to develop the network of soft mobility (cycle/pedestrian paths) and green infrastructure. Urban farming can strengthen ecotourism and improve tourism, especially through recreational and agritourist farms in the urban and peri-urban areas. Urban and peri-urban farming can also contribute to preserve **local knowledge, memory, cultural traditions** and cultural **heritage** of food and food products, quality and multifunctional use of open spaces and open views, scenic and **aesthetic values** of landscape, landscape heterogeneity, as well as traditional **landscape features** and components such as hedges, tree avenues, terraces, stone walls and historic buildings.

Issues for attention



Some urban gardens could favour the processes of **gentrification** that can increase class-based disparities and tensions in neighbourhoods, within gardens and between different stakeholders. Some UA types, such as Zero Acreage farms and rooftop greenhouses could also increase **social exclusion** due to possible low public accessibility to fresh and healthy food.

Socio-cultural benefits of urban agriculture



Shuttleston Community Growing Project is located in Glasgow (Scotland). The allotments are situated on an abandoned and contaminated area. For these reasons, vegetables and fruit are cultivated in above ground containers in order to address demand from individuals, families and groups. The project involves local people, volunteers and different local organisations such as schools, local authorities and associations. The main benefits of this project include **the redevelopment of degraded neighbourhoods**, the improvement of **social cohesion** and the strengthening of the **cooperation and participation** of several stakeholders.

 <http://www.shuttlestongrowing.org.uk/>

Red de Huertos Urbanos de Madrid (Rehdmad) is a network of 75 community urban gardens situated in Madrid. This network aims to strengthen connections between the city and food production, promoting organic methods, inclusive citizen-based and self-governing approaches, information, educational programmes and cooperation with several stakeholders (NGOs, universities, municipality, etc.). Many gardens include common spaces to promote **social inclusion and interaction**, as well as different **cultural activities**.

 <https://redhuertosurbanosmadrid.wordpress.com/>

The City of Bamberg is located in the north of Bavaria (Germany). It preserved the medieval layout and it is characterised by the presence of numerous buildings of historical value as well as a historic urban market-gardening heritage which has been cultivated since the Middle Ages. For its gardening traditions, the city of Bamberg was included in the Germany's UNESCO intangible heritage list. This city clearly demonstrated the contribution of UA to **preserve and enhance memories, cultural traditions and heritage**, as well as **traditional landscape features**.

 <https://en.bamberg.info/gaertnerstadt/>

Environmental and climate benefits of urban agriculture



UA, in particular DIY gardens/farms, organic or environmental-friendly urban farming, community parks and gardens, can foster the management, preservation, improvement or growth of **urban green spaces and green infrastructure**. The additional surface of plants and green areas can contribute to **decrease storm water runoff**, improve rainwater retention and **prevent erosion**.



UA plants and greening practices can contribute to a **reduction in the urban heat island effect**, temperature regulation and climate adaptation. UA plants can contribute to the **carbon sequestration** and **decreased air pollution** filtering fine dust particles. Local food production and direct selling of some UA types, such as DIY gardens/farms and community gardens, as well as local farms and vertical farms, can contribute to a **reduction in food miles**.



UA, particularly organic or environmental-friendly farming, as well as community parks and gardens, can significantly contribute to preserving **urban biodiversity**, as well as habitats and species, especially through professional urban farming in protected areas. Organic or environmental farms can also contribute to **increase diversity** of plants and native species in urban and peri-urban areas. In addition, Urban gardens could provide **pollination services** to other crops and/or habitat for pollinators in urban and peri-urban areas.



The presence of UA practices can foster the conservation of urban green spaces and **prevent land consumption**. In addition, some UA types, such as Zero Acreage farms and Building-Integrated Agriculture systems (BIA), don't require additional land. Urban food gardening can also foster the **environmental regeneration of brownfield sites** and contaminated land, derelict spaces, abandoned buildings, improving the quality of soil.

Issues for attention



The local food systems could be less energy and water efficient than other production systems. For example, some Zero Acreage farms and rooftop gardens, could increase electricity use or require **high energy demand**. Some UA types and specific production methods, such as high input agricultural practices, could use inefficient irrigation systems, **produce pollutants and contaminate soil** and water bodies. Intensive UA practices could significantly reduce urban biodiversity, as well as habitats and species, also introducing **alien and invasive species**.

Environmental and climate benefits of urban agriculture



The Belvedere park is located in Cologne (Germany), as a part of its green infrastructure system and network of green spaces. This park contributes not only to increase recreational and **ecological network**. It also defines boundaries to urbanized areas, as well as **preventing land consumption**, increasing **biodiversity** and the aesthetic qualities of landscape, promoting the cultivation of traditional crops.



Orti Generali is a community garden in the south area of Turin (Italy). It is situated within an urban park and in a post-industrial neighbourhood. The gardens are cultivated exclusively through organic methods and managed by associations, gardeners and volunteers. Orti Generali is a good example of **nature-based solution** and **regeneration** of degraded areas. It contributed to **soil conservation and fertility**, increased and managed **green spaces**, as well as providing pollinator-friendly spaces, reducing pesticide use and increasing **urban biodiversity**.

 <https://www.ortigenerali.it/>



Nabofarm is an urban farm located in Copenhagen (Denmark), in an old auto repair workshop building. The sustainable production methods - based on hydroponics and managed systems, no use of pesticides, zero waste from packaging, low water consumption - make it a good example of **resource-efficient** cultivation systems and **reuse of abandoned buildings**.

 <https://nabofarm.com/>

Food benefits of urban agriculture



General speaking, urban farming and gardening can improve **food self-reliance** of cities and **food self-provisioning**. In addition, some UA types, particularly urban and social farms, as well as DIY gardens/farms, can strengthen **food security**, expanding the nutritional provision and/or decreasing costs. Some types of UA, such as Zero Acreage farms and Controlled Environment Agriculture (CEA) systems, can also contribute to address food insecurity and improve food access to low-income consumers, strengthening local food production and **social agriculture**. In addition, DIY gardens/farms, Local farms, Zero Acreage farms and CEA systems, can contribute to **reduced supply chains** and the distance between producer and consumer, promoting **alternative distribution channels and networks**, as well as producing **local and fresh fruits and vegetables**.



UA, especially DIY gardens/farms, community parks and gardens, local farms, organic and/or traditional production systems, Zero Acreage farms and CEA systems, can contribute to **improve nutritional benefits** and the **access to fresh and healthy fruits and vegetables**. Community gardens and parks, DIY gardens/farms, as well as social farms, can favour the development of **dietary diversity**, as well as access to healthy, **ethnically and culturally appropriate food**. Urban food gardening can also contribute to ensure **food sovereignty** and justice, especially through the involvement of different social groups in the production, selling and management processes.

Issues for attention



The food produced by farming and gardening in urban areas could be of **low quality or harmful** for human health, due to the air pollution and the soil/water contamination. In some cases UA could produce **low food outputs** and it may not be able to totally meet the demands of urban areas. Some UA forms, such as community gardens and parks, DIY gardens/farms, as well as social farms, could be inefficient in terms of self production of food.

Food benefits of urban agriculture



Oosterwold is a new peri-urban area located in the city of Almere (Netherlands). A former polder land area covering 4,000 hectares converted into a mixed rural-urban area that will include 15,000 new homes towards 2030. Approximately 50% of this area is allocated to urban agriculture. This means that any landowners, in order to develop new buildings in this area, must accept an agreement that includes the allocation of at least 50% of each plot of land to urban agriculture. With this approach the city of Almere, during the coming years, aims to provide 10% of the **food production** of the City Region.

 <https://maakoosterwold.nl/vogelvlucht/>



MicroFlavours is an innovative Urban farm in Brussels (Belgium) specialising in the production of microgreens and vegetable shoots with higher nutritional value. It is located in the cellars of a former brewery and adopts hydroponic water methods in a controlled environment. The aim of this initiative is to create a sustainable and **self-sufficient food chain** through **fresh, high-quality and local food products**.

 <http://www.microflavours.brussels/>



The Consorzio DAM involves many farms located in the peri-urban areas of Milan (Italy), within the boundaries of the Milan Agricultural South Park (PASM, Parco Agricolo Sud di Milano) and in close connection with several urban parks. Approximately 30 farms cultivate 1.500 hectare of farmlands. They are characterized by a mixed ownership (private sites and lands granted to private companies from the Municipality of Milan) and different **local agri-food products** such as: rice, legumes, herbs, horticultural crops, medicinal plants, milk, meat, eggs, and honey. Agri-food products are **directly sold on-farm** or at retail (e.g. rice is sold to school canteens).

 <http://consorziadam.com>

Health and well-being benefits of urban agriculture



In general, working and living in greener cities is good for **well-being and quality of life**. Urban food gardening can contribute to increase the quality of urban and peri-urban green spaces, the quality of life of citizens in greener and healthier urban environments, the options for people to engage in leisure activities, pleasant ways to spend their time, hobbies and a way to get people out of the house. Urban food gardening and social farming can also contribute to **strengthen self-esteem** and **improve state of mind** of gardeners and practitioners, as well as fostering access to fresher and healthier food and better balanced diets.



Urban food gardening and social farming can contribute to improved relaxation, **physical and mental health**, green care, as well as to developing specific therapies and rehabilitation programs. In addition, some UA forms, such as organic farming, Zero Acreage farms and vertical hydroponic systems, could **reduce human toxicity** of agricultural products and inputs, for example using biofertilizer and residual materials as growing media.

Issues for attention



UA could increase **human health risks** practicing agricultural activities on polluted soil or areas, near industries or in dense traffic zones, using contaminated water and fertilizer, through some plants that may foster allergies or food poisoning, as well as consuming food from highly contaminated soil. In addition some smells, odors and noises produced by UA, may foster **anxiety**, could **disrupt peace and quiet**, as well as increasing disturbance.

Health and well-being benefits of urban agriculture



Ninewells Community Garden is situated in the grounds of Ninewells Hospital, in the City of Dundee (Scotland). The garden aims to encourage physical and healthy activities through therapeutic and rehabilitative gardening. It involves not only patients and hospital staff, but also visitors, the local community, many volunteers and different organizations. Current activities include the production of organic fruit and vegetables, honey, training for volunteers, healthy living, eating and cooking workshops. The main health benefits of this initiative regard the sphere of **prevention, treatment, recovery and rehabilitation**, as well as **healthier behaviour** and a significant **reduction of stress**.

 <https://ninemwellsgarden.org.uk/>



The Orchard Project is a UK national charity organisation that involves over 540 orchards across England, Scotland and Wales. In this context a recent survey - that involved volunteers participating in the Orchard Project - has proved several positive benefits in terms of **mental health and well-being**. The participation in the orchard activities improved **physical and emotional well-being** of gardeners, as well as reinforcing **the connection with other people**.

 <https://www.theorchardproject.org.uk/>



The Agriocopecetto is a cooperative, organic and social farm launched in 2010 in the peri-urban area of Turin (Italy). It produces, processes and directly sells different agri-food products such as jams and sauces. In addition, the Agriocopecetto farm provides therapeutic and rehabilitation support for social and work integration of disabled people and disadvantaged workers. It also organizes and promotes outdoor activities and walking in order to **improve physical and mental health** and to foster **healthy behaviour**. The Agriocopecetto farm is a good example of the multiple benefits of urban and peri-urban agriculture on the **health and wellbeing sphere**.

 <https://www.agriocopecetto.it>

Economic benefits of urban agriculture



Urban oriented farming can **improve local economies**. Local farms and innovative urban food production approaches, such as Zero Acreage farming, can contribute to developing local economies and to the **reduction in local economic leakage**, strengthening relationships between consumers and producers. In addition, urban gardening can contribute to promoting local producers and markets.



The proximity to an urban context can contribute to innovation and can create **new business models** and improve **agricultural diversification**, as well as the provision of recreational activities. Agricultural diversification can also develop new sources of income and agri-food products with higher added value. Some innovative urban food production approaches, such as Zero Acreage farms, as well as vertical or indoor farming for the production of edible insects and algae, can also develop **alternative markets** and can create new market/consumer relationships.



UA, especially urban farms, Zero Acreage farms and Controlled Environment Agriculture (CEA) systems, can contribute to **create green jobs** and other opportunities for local employment in several economic sectors.



Urban food gardening and farming can contribute to a **reduction of public land management costs**, for instance through maintenance agreements with farmers and gardeners' associations.



Issues for attention

Some urban gardens could also **increase public costs** for the maintenance of green spaces. Some UA types, such as green walls and facades, rooftop gardens, indoor and high tech farming, have **high installation costs**. In addition, in some cases, the cost of fertilizer, seeds and tools could be a financial loss for some urban gardeners. At the same time, closer contacts between producers and consumers, especially in the case of urban farming, could provide easier mechanisms of tax evasion and control of the food produced.

Economic benefits of urban agriculture



Onze is located in the peri-urban area of the City of Almere (Netherlands). It is a commercial allotment garden managed by a farming family and situated in a greenhouse that rents 450 plots (of about 40 m² each) for the production of fruit and vegetables. It offers different services such as water supply, pest control and plants, as well as physical labour. The plots are also rented to local communities, restaurants and schools. Onze sells directly on site the surplus products from the gardens. It is a good example mainly in terms of **agricultural diversification, improving local economies and creating alternative markets**.

 <http://www.onzevolkstuinen.nl/>

The Parc des Lilas is located in a large area of approximately 97 hectares that contains orchards, cereal crops, gardens, meadows and grazing zones, in the municipality of Vitry-sur-Seine, in the Île-de-France Region (France). The park includes a mixture of small scale horticultural enterprises, allotment gardens and public green spaces. These have adopted an approach based on low maintenance techniques, organic production, innovative practices and marketing, as well as educational and training activities. It is a good example of **agricultural diversification, mixture of land use and management of public land**.

 <https://www.vitry94.fr/632/services/espaces-verts/les-parcs/le-parc-departemental-des-lilas.htm>

Blizkata Ferme is a local farm in the peri-urban area of Sofia (Bulgaria). This farm produces several varieties of vegetables, cultivated through organic methods, and sells them through different direct sales systems such as a “box scheme” and a weekly, local farmers’ market. In addition, the farm offers kids educational programmes that include cooking camps, activities with animals as well as planting and harvesting of vegetables. It is a good example of **agricultural diversification, creation of alternative markets and innovation in marketing/consumer relations**.

 <https://blizkataferma.com/>