

Urban Agriculture Benefits Portfolio



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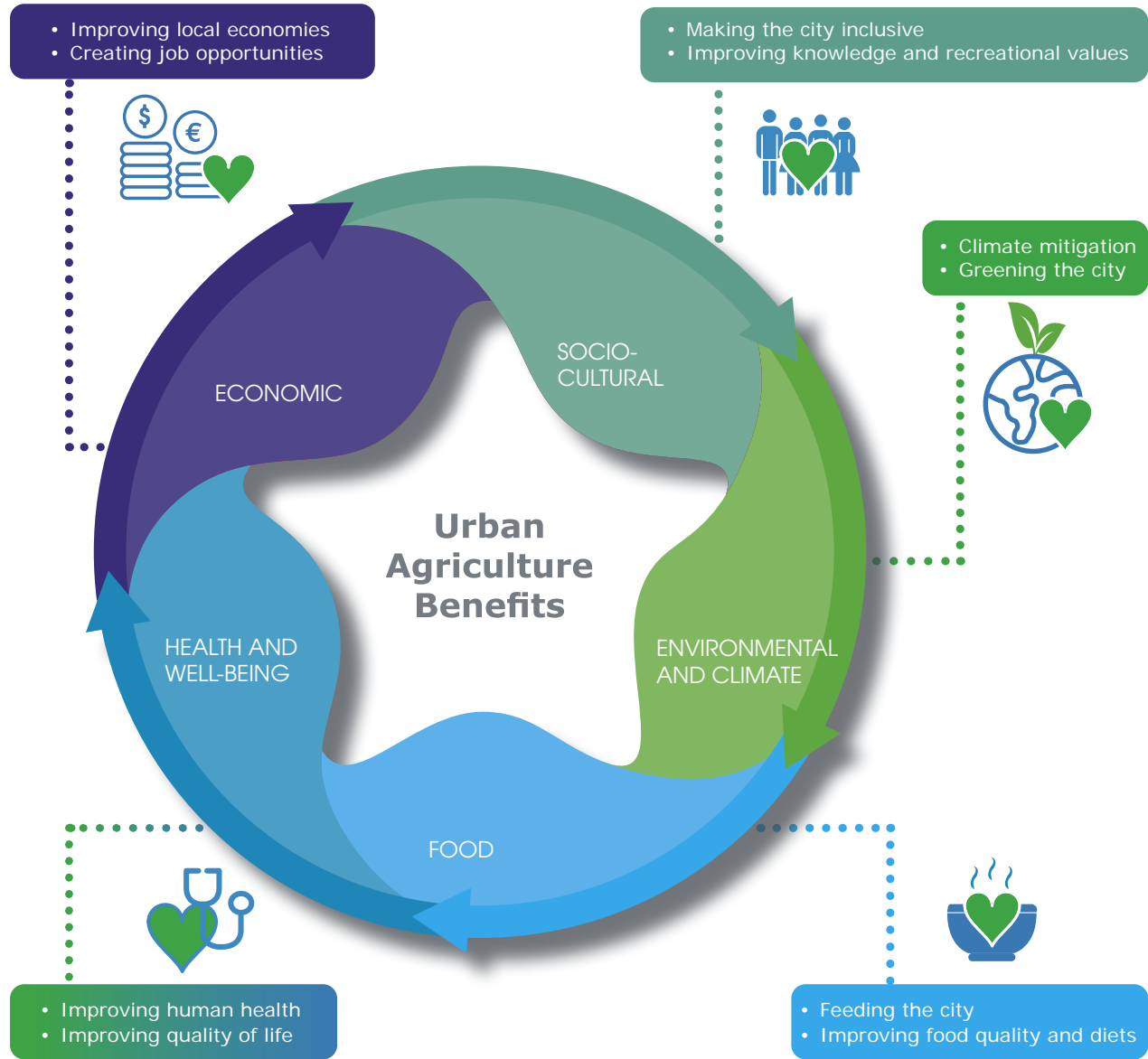


EFUA
European
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Agriculture

Urban Agriculture Benefits Portfolio | Introduction and Overview

The **benefits of Urban Agriculture (UA)** are diverse and link directly to key aspects of urban sustainability. UA has the potential to increase the quality of urban life by focusing upon delivery of many of the important themes listed on current world policy agendas; These include economic resilience, healthy food provisioning, and environmental stability.

This benefit portfolio presents the **five main benefit categories** which address the needs and demands of citizens, to shape policy recommendations and promote different types of UA initiatives.



1| Economic benefits

Professional UA can considerably improve local economies and reduce local economic leakage, thereby strengthening relationships between consumers and producers and alternative food chains and networks. Non-professional farming and urban gardening can also promote local agri-food products and markets. The proximity to an urban area can favour innovation and the creation of new business models, based on the agricultural diversification and the provision of potential recreational activities. Agricultural diversification can be helpful in developing new sources of income, agri-food products, and services. Some UA forms, e.g. vertical or indoor farms, can create alternative markets and new consumer relationships, e.g., for the production of edible insects and algae. In addition, UA can contribute to the creation of new green jobs and other local work opportunities. Finally, UA can significantly reduce public land management costs, for example, through maintenance agreements with farmers and gardeners' associations.

Key economic benefits

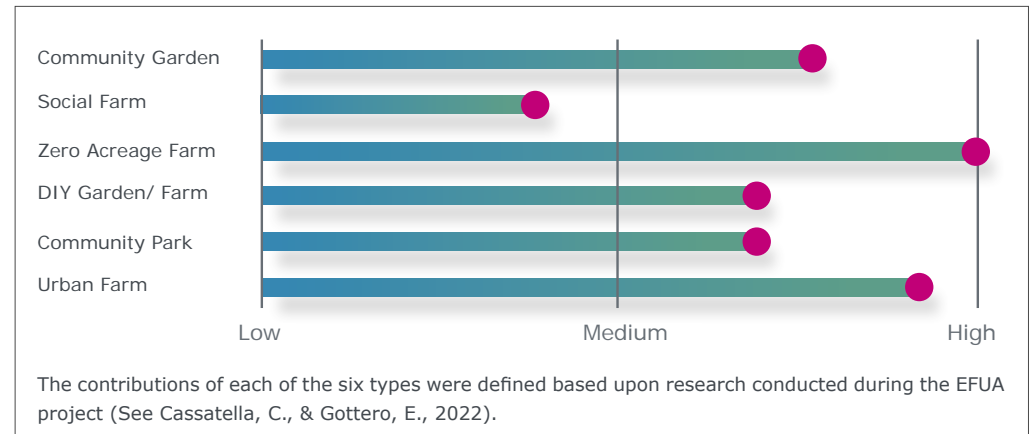
- Diversification of income and activities
- Creating job opportunities
- Improved local economies

Be aware of unwanted effects



Some high-tech systems, such as green walls and facades, rooftop gardens, indoor and high tech farming, have high installation costs. In addition, the cost of fertilizer, seeds, and tools could be expensive for some urban gardeners. Finally, closer contacts between producers and consumers could favour mechanisms of tax evasion.

Contributions of Urban Agriculture types to produce economic benefits



Picture by Daniel Mündenlein

2| Socio-cultural benefits

Participation and cooperation among diverse private and public stakeholders can enhance interactions and networking, thereby fostering a healthier local community and a stronger sense of place. Many urban food gardens and social farms organise social activities to reduce discrimination, improve social inclusion and achieve gender equality. This happens through a collaborative approach between gardeners, citizens, and municipalities and through involving different social and cultural groups in the management and use of urban plots. Often urban gardens offer educational and training activities on food, nutrition, diets, and gardening. They can enhance food literacy, knowledge, and skills-development, as well as environmental awareness and cultural values amongst individuals and communities.

Professional and non-professional UA can also contribute to new forms of recreational activities, the development of path networks (bike lanes/sidewalks) and eco-tourism, particularly through recreational and agritourist farms. Urban and peri-urban farms also contribute to the maintenance of local knowledge, cultural traditions, and heritage. They enhance the quality, heterogeneity, and multifunctional use of outdoor spaces and the aesthetic qualities of agricultural landscape, including through maintaining landscape features such as hedges, terraces, stone walls, and historic buildings.

Key socio-cultural benefits



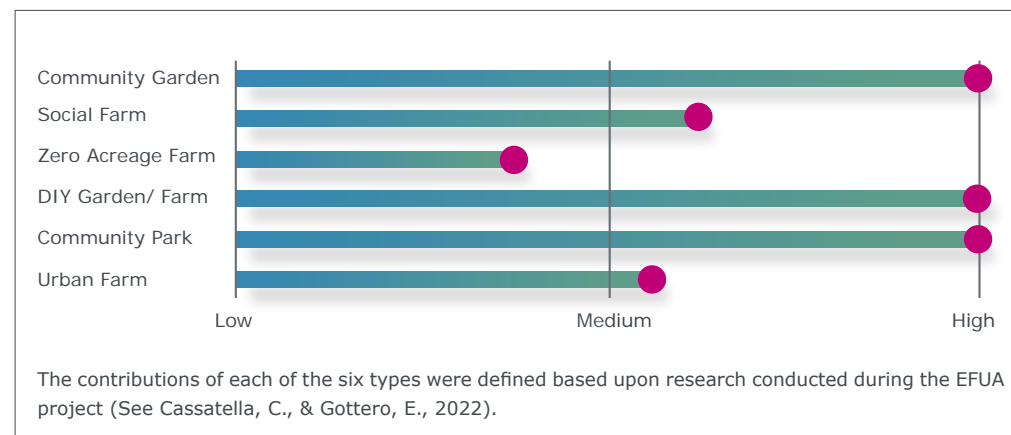
- Improvement of social cohesion and developing feelings of belonging and a sense-of-place
- Development of education, knowledge, innovation, and awareness on food, agriculture and environment
- Improvement of leisure, recreation activities and tourist attractions

Be aware of unwanted effects



In some circumstances, UA initiatives could increase the incidence of class-based disparities and tensions in neighbourhoods, within gardens and between different stakeholders, thereby increasing the risk of green gentrification. Due to possible low levels of public accessibility to fresh and healthy food, some high-tech farms might also favour social exclusion.

Contributions of Urban Agriculture types to produce socio-cultural benefits



Picture by Daniel Münderlein

3| Environmental and climate benefits

The conservation and the increase in surface of urban green areas, plants, and green infrastructure that is associated with UA initiatives helps to contribute to decreased storm water runoff, prevents erosion, improves rainwater retention, and reduces erosion. Some UA initiatives, particularly Zero Acreage farms and Building-Integrated Agriculture systems (BIA), also favour the environmental regeneration of brownfield sites, contaminated land, and abandoned buildings, as well as promoting the sustainable use of resources. Plants, trees, and greening practices provided by UA initiatives help to regulate temperature and reduce the urban heat island effect, contributing to the climate change adaptation. UA plants are useful to the carbon sequestration and for decreased air pollution. The local food production and direct selling, also lead to a reduction in food miles. Finally, practising UA can contribute considerably to maintaining specific habitats and native species, protected areas, as well as biodiversity, particularly through organic or environmentally friendly farming practices.

Key environmental and climate benefits

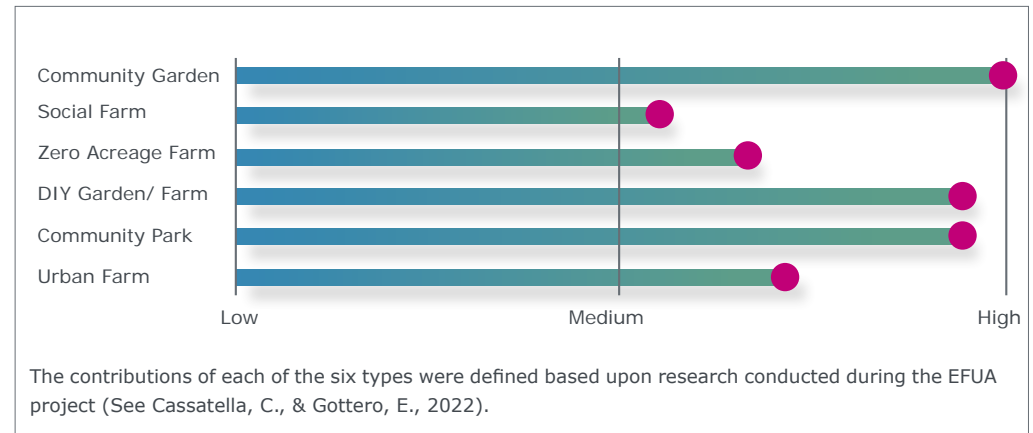
- Climate change mitigation
- Increased quality and quantity of urban green spaces and green infrastructures
- Preservation of urban biodiversity

Be aware of unwanted effects



High input agricultural practices could increase inefficient use of natural resources and use of pollutants and intensive production systems. These practices could contaminate soil and water bodies, further undermining the quality of urban and peri-urban environments. Some less environmentally friendly UA initiatives could also significantly threaten the conservation of urban habitats and biodiversity, also introducing alien and invasive species.

Contributions of Urban Agriculture types to produce environmental and climate benefits



Picture by Daniel Mündenlein

4| Food benefits

Food produced by UA initiatives can improve food security, as well as self-reliance and self-provisioning of cities and urban communities. By producing local and fresh fruit and vegetables, strengthening local food production systems, as well as promoting alternative distribution channels and networks, UA can significantly improve food access to consumers, reduce supply chains, and reinforce direct relationships between producers and consumers. Many forms of UA improve diet quality and access to fresh and healthy fruit and vegetables, while others (such as community gardens and parks, DIY gardens/farms, as well as social farms) favour dietary diversity, as well as access to ethnically and culturally appropriate food. Through the involvement of different social groups in the production, retail, and management processes, some UA initiatives (especially social farms and urban food gardens) contribute to food sovereignty and fairness.

Key food benefits



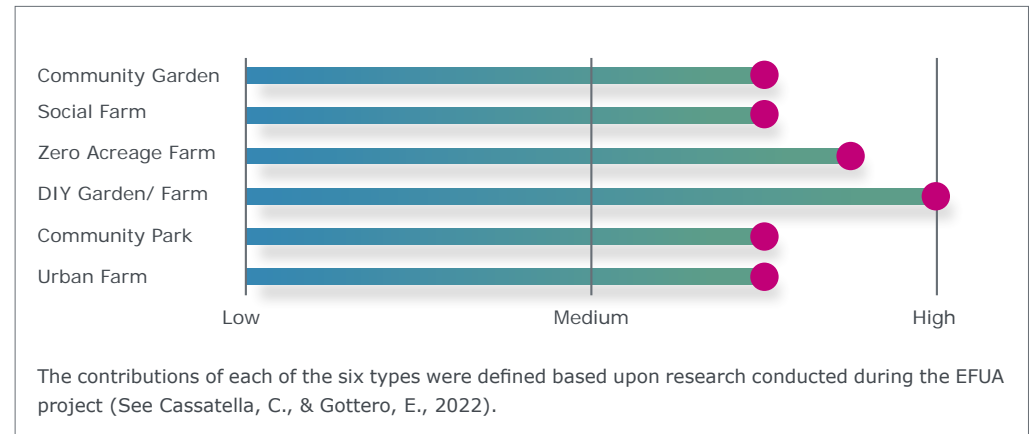
- Improving food quality and diets
- Improvement of food security
- Improving food access and subsistence

Be aware of unwanted effects



Due to the air pollution and the soil and/or water contamination, the quality of food in some urban areas might be low or harmful for human health. In addition, the food quantity produced by some UA initiatives, might be too low to feed the city and to meet the food demands.

Contributions of Urban Agriculture types to produce food benefits



Picture by Jan Eelco Jansma

5| Health and well-being benefits

UA contributes to greener and healthier urban environments, working and living places and thus, well-being and quality of life in cities. Furthermore, UA can be a pleasant way to spend time and to get people out of the house, as well as to engage in leisure and hobbies. Practising UA allows gardeners and practitioners to increase self-esteem, improve their state of health and well-being, as well as encouraging access to fresher, healthier food and better, varied diets.

UA and in particular, urban food gardening and social farming, is also helpful for relaxation, physical and mental health, and for developing specific therapies and rehabilitation programs. In addition, high-tech production systems especially, such as vertical and indoor farming, offer potential to significantly reduce the toxicity of agricultural products, when using biofertiliser and residual materials as growth enhancers.

Key health and well-being benefits



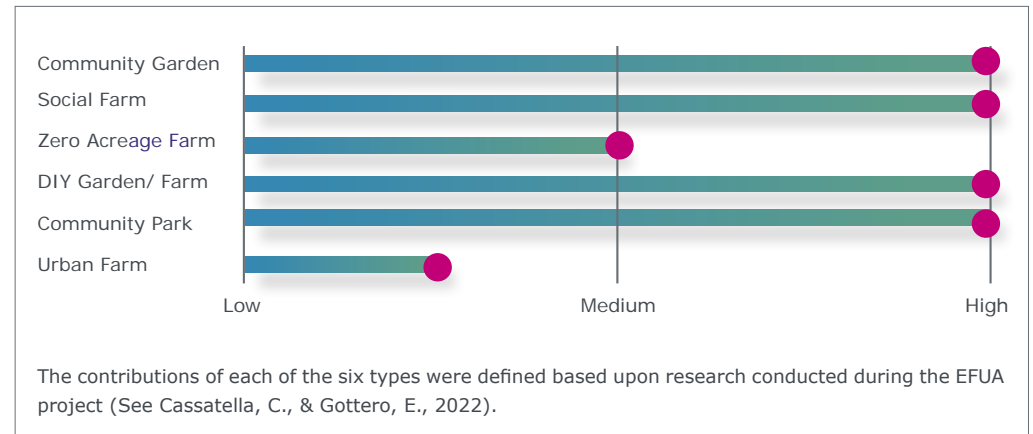
- Improvement of well-being and quality of life
- Improving food access and subsistence
- Fresh and healthy food

Be aware of unwanted effects



Practising agricultural activities in urban and peri-urban areas could increase human health risks due to the proximity to possible contaminated sites, polluted soils, industries, or dense traffic zones. Some plants used by UA may foster allergies or food poisoning. In addition some odours and noises related to UA may raise anxiety, increase disturbance, and reduce a sense of peace.

Contributions of Urban Agriculture types to produce health and well-being benefits



Picture by Daniel Mündenlein

Overview of Urban Agriculture Types



One of EFUA's aims was to explore and understand the diversity of current UA from a European perspective. Based on cross European research, EFUA developed a typology of six types, to better understand the diversity of UA. Each of these six types share characteristics on the spatial, production, operational, and community dimensions. It became apparent that each type has a unique set of benefits and contributes to urban and peri-urban living environments to differing degrees. To appraise the value of these benefits within practice and policymaking, it is critical to fully understand the spatial, production, and socio-economic characteristics. This section aims to highlight the distinct characteristics of the six UA types, underlining how they contribute to urban areas and their inhabitants. From community gardens to zero acreage farming, the diverse spectrum of UA practices extends far beyond a one-size-fits-all approach.

As urbanisation continues to reshape our cities, an understanding of the benefits (and how they are linked to the various types) of UA is crucial. By examining how different UA approaches come about in specific areas, policymakers can draw inspiration for developing tailored solutions. The following pages offer insights into these six types which can inspire policymakers to exploit the full potential of UA within their communities. For a comprehensive overview of UA types see the **typology of Urban Agriculture**.



Picture by Daniel Münderlein

Type **1** The Urban Farm

The Urban Farm is generally characterised by its relatively high acreage and its predominately commercial production, within an urban or peri-urban space. Urban Farms often provide a diverse range of products, which are either sold directly to the consumer, or through shops, restaurants, or other catering outlets. A farmer or a farming family is normally responsible for the maintenance of the initiative, however, some enterprises also illustrate high levels of involvement by customers, as in the case of community-supported agriculture or citizen owned farms. However, Urban Farms do not only produce food; they frequently offer diverse (leisure) activities and services and provide opportunities to strengthen the links between producers and consumers. Consumers know where their food comes from, how it is grown, and sometimes can get involved in activities offered by the farm. There is a myriad of different types of urban farms, linked to the local context, the type of produce, the services provided and their connection to their customers.

Blizkata ferma (The Nearby farm) | A Regenerative Family Farm | Negovan, Bulgaria

The Nearby Farm started 15 years ago with a small family garden in the village Negovan, just outside Sofia. Today they have several greenhouses and dedicate all their time to producing leafy-greens which they sell to a growing number of customers through subscriptions. The Nearby Farm goes beyond the role of a traditional agricultural business; The farm perceives its approach as making a small contribution to a healthy ecosystem, biodiversity, and education, whilst fostering the awareness of future generations.

See here for more information:

<https://www.efua.eu/projects/blizkata-ferme-farm-nearby>



Picture by Daniel Mündenlein

Type 2 The Community Park

The Community Park combines food production in a publicly accessible space with a diversity of activities and services. Initiatives of this type have a strong communal component, often integrating activities with other environmental, cultural, educational, or social aspects. Community Parks are often located in the urban space; however, they can also be found within peri-urban areas. They are of medium to low acreage. The products are often diverse and they are mostly grown for own consumption. The responsibility for the Community Park is typically shared between a group of people, such as an association, a foundation, a NGO, or an informal group. This type is diverse and ranges from public parks with food facilities, to fully fledged urban food forests.



Picture by Picasso Food Forest

The Picasso Food Forest | Reconnecting People to Nature | Parma, Italy

The Picasso Food Forest is an urban community-managed food forest that was born from the citizen movement, Fruttorti Parma. This food forest provides a flourishing recreational and educational greenspace for the local community (in an area of 4500 square metres). Fruit and vegetables are accessible to all to promote healthy eating habits. The Picasso Food Forest is also a place for citizens to connect, to learn, and practice agroecology and to share their ideas on sustainability, self-sufficiency, community resilience and empowerment.

See here for more information:

<https://www.efua.eu/projects/picasso-food-forest>

Type **3** The DIY Garden/Farm

Do-It-Yourself Gardens or Farms can include allotment gardens and pick-your-own farms. Compared to the Community Park these initiatives usually focus more on food production and offer fewer activities or leisure services. The emphasis is upon the individual effort in food. DIY Gardens or Farms are mostly located outdoors in peri-urban areas and offer a medium acreage. Usually, vegetables are the main product and are grown or collected for own consumption. This type might be maintained by a group of people (such as an association, a foundation or another informal group), or occasionally by the owner or farmer/farming family.

ONZE | Allotments in a Greenhouse | Almere, The Netherlands

ONZE combines entrepreneurship with the concept of allotment gardens. In 2012, the owner and his family started renting out individual allotments within the greenhouse. People were soon eager to participate, because they do not depend on the growing season and the climatic conditions are also more favourable for the production of exotic crops. This enabled cultivation of fruit and vegetables which are usually not viable within the Dutch climate, thereby attracting a diverse group of gardeners. Nowadays, the site is also popular with schoolchildren, for learning about vegetable production.

See here for more information:

<https://www.efua.eu/projects/onze-volkstuinen-onder-glas-almere-netherlands>



Picture by Jan Eelco Jansma

Type 4 The Zero Acreage Farm

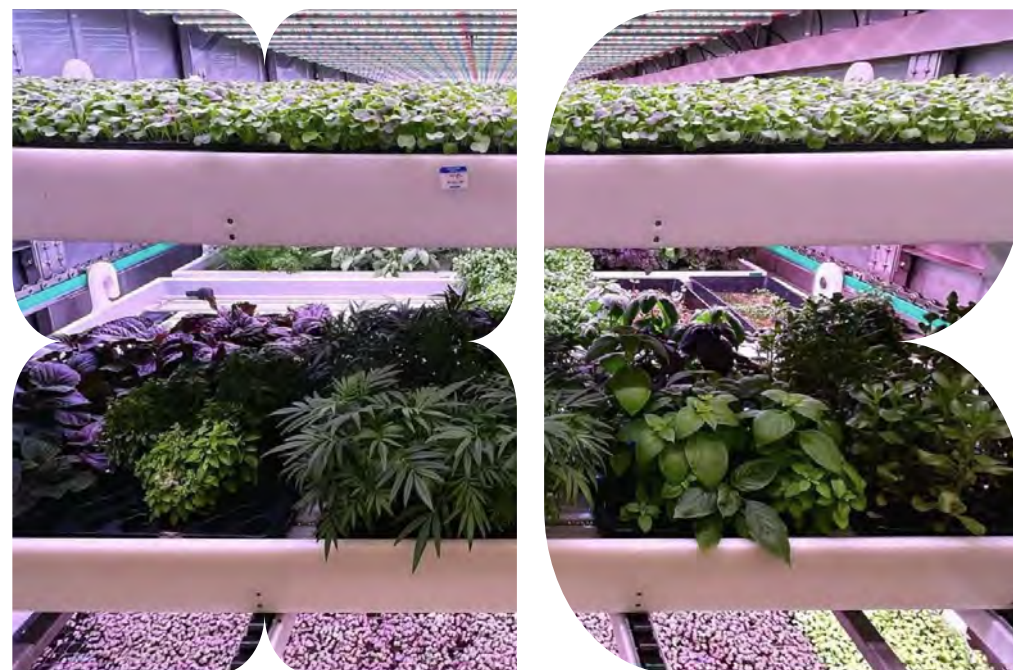
Zero Acreage Farms range from high-tech to low-tech, and from non-profit to commercial farming. The key characteristics of this Urban Agriculture type are space efficiency, its emphasis on circularity, resource efficiency, and its integration within (or on top of) buildings. Examples include vertical and floating farms, raised beds on rooftops (or in underutilized industrial areas), green facades, and production systems in cellars which rely on artificial lighting. Usually, Zero Acreage Farms are found in urban areas and occupy a small area. Indoor production is dominant, but outdoor production also exists within this type. Predominately, plant-based products are produced, such as herbs, leafy-greens/salads, and microgreens, but sometimes also mushrooms, insects, and fish. Most of the produce is then directly sold, to consumers or other customers (including retail, restaurants or catering businesses). Typically, a farmer/farming family, an entrepreneur/group of entrepreneurs, or an NGO is responsible for the maintenance of the initiative. In some cases, leisure activities are also integrated, such as provision of a restaurant where the produce is consumed.

PLNT | Ecologic Farming on 30 m2 | Antwerp, Belgium

In the Port of Antwerp, bright green containers are clearly evident amongst the dockland surroundings. Salad, kale, basil, and many other fresh leafy-greens are produced within the containers, through use of space saving technologies. This is indoor vertical farming in action and is the first project of its kind within the City Antwerp. The founders, see sustainability as a top priority within their business model. PLNT is CO2 neutral, reuses 95 percent of the water, does not use pesticides, uses returnable packaging, and the produce is delivered by bike.

See here for more information:

<https://plnt.be/>



Picture by PLNT | Antwerpen

Type 5 The Social Farm

Social Farms combine Urban Agriculture with social care and/or health care. The initiatives within this type provide therapeutic services, intercultural and social integration, or support for the socially disadvantaged. Social farms are usually located within the outdoor urban space and range from a medium to low acreage. These farms grow a diversity of products, which are normally sold or gifted directly to consumers. Some initiatives produce for their own consumption. The maintenance can be organised by a farmer/farming family, the owner, an NGO, or a non-profit organisation.

Boerderij 't Paradijs | Healthcare and Farming | Barneveld, The Netherlands

Boerderij 't Paradijs is an organic farm that integrates food production and health care. The motivation was to create a space where nature, animals, and humans can interact in harmony. Elderly people and adults with physical or psychological needs can help out with taking care of farm animals (cows, pigs, chickens etc.) and other farm activities whilst being in the company of trained caregivers. Taking care of the environment is a priority of Boerderij 't Paradijs. They grow forty different kinds of fruit and vegetables, organically and according to the season. (Typology of UA, Jansma, J. E., et al, 2022).

See here for more information:
<https://boerderijparadijs.nl/>



Picture by Daniel Munderlein

Type 6 The Community Garden

A key characteristic of the Community Garden is developing a sense of community. This is generally more important than the food growing activity undertaken, although production is still very much a core element of these gardens. The gardens are mostly located in the outdoor urban space, within neighbourhoods, and the acreage is rather small. Generally, the produce is diverse and the initiatives within this type mostly produce for their own consumption, whilst also undertaking other diverse additional activities. Community Gardens are generally maintained by their participants or NGO's at a local level.

Guldängen | A Playground with Cultivation | Malmö, Sweden

Guldängen means "golden meadow" in Swedish. The garden is a space for children to play, to be creative, to build, and to garden. Over an area of 2,500 square metres, the combination of a playground and an urban garden provides a green learning environment and outdoor educational space. Together, parents and their children can learn about ecology, food, and sustainability whilst undertaking practical gardening. The garden was founded by a local non-profit association.

See here for more information:

<https://www.vaxtvarket.se/projekt/guldangen/>



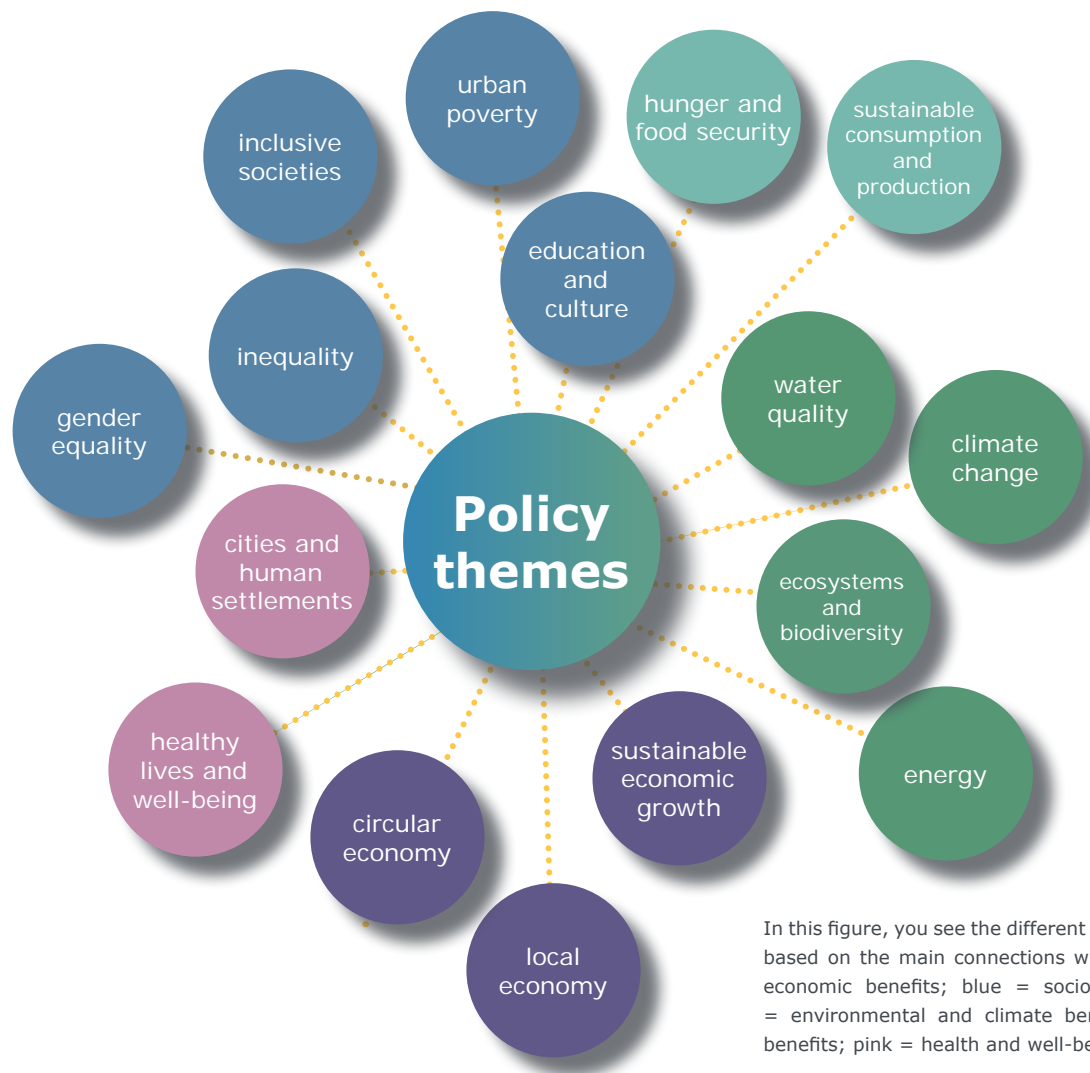
Picture by Guldängen

Urban Policy Section

This section guides policy makers to unlock the potential of UA and presents examples at city-level as good examples to implement UA in urban and peri-urban areas.

Several studies and EFUA results have shown that UA can address many urban needs and demands. The multiple benefits of UA cover a wide range of policy themes of the Sustainable Development Goals (SDGs), and policy targets that many European cities have already identified within their own agendas. This figure summarizes the key areas potentially related to UA and its benefits or where UA can be used as a vehicle to deliver numerous sustainability goals. In order to identify the main areas of UA benefits and some of UA policy themes to which UA can significantly contribute, this Urban Agriculture Benefits Portfolio also shows some example of supralocal or city-level initiatives that support UA, thereby developing policy tools to lever the potential and multidimensional benefits of UA. For further information see also the references section.

Areas and urban policy themes where UA can contribute



In this figure, you see the different policy themes categorized based on the main connections with UA benefits (purple = economic benefits; blue = socio-cultural benefits; green = environmental and climate benefits; light blue = food benefits; pink = health and well-being benefits)

Example 1 | UA as a part of green infrastructure in the Belvedere park | Cologne, Germany

The Belvedere park is located in Cologne (Germany), as part of its green infrastructure system and network of green spaces. This UA park contributes not only to increasing the area for recreational benefits and ecological diversity. It defines the boundaries to urbanised areas, prevents land consumption, increases biodiversity, improves the aesthetic qualities of the city landscape, and promotes the cultivation of traditional crops. It is a good example of greening the city and improving urban and peri-urban settlements through UA.

<https://www.efua.eu/projects/belvedere-park-cologne-germany>



Picture by RWTH University of Aachen

Example 2 | The self-sufficient district of Oosterwold | Almere, the Netherlands

Oosterwold is a peri-urban area located in the city of Almere (Netherlands). This former polder land area covering 4,000 hectares has been converted into a mixed rural-urban area, with the intention to create 15,000 new homes by 2030. Approximately 50% of this area is allocated to Urban Agriculture. This means that any landowners, in order to develop new buildings, must endorse an agreement that includes the allocated 50% of land to Urban Agriculture. Through this approach, the City of Almere aims to provide 10% of the food production of the Oosterwold City-region, during the coming years. Almere is a good example of how local UA policy can contribute to feeding the city in a healthy, equitable, and sustainable way, whilst also improving local and circular economies.

<https://maakoosterwold.nl/>



Picture by Jan Eelco Jansma

Example 3 | Guidelines and regulations for urban gardens | Vilnius, Lithuania

Recently the city of Vilnius (Lithuania) has adopted new guidelines and regulations for urban gardens, with a special focus on environmental sustainability, and integrated these within the city's urban policies. Vilnius also implemented a participatory approach that involved different private and public stakeholders such as the municipality, NGOs, schools, and the Ministry of Environment. The City of Vilnius has also launched a plan to support the development of new urban gardens, aiming at encouraging participation and creating a sense of place, especially in particular neighbourhoods. Vilnius has also initiated a dialogue with the National Land Authority on possible temporary use of State land, in order to tackle land-related ownership issues and to increase the land allocation for urban gardening. This case is based on the experience of the City of Rome (Italy) and it was developed in the context of the RURBAN Project (URBACT program). In conclusion, the initiative of Vilnius has also contributed to social inclusion and to improving the quality of life and the urban environment.

<https://urbact.eu/good-practices/new-urban-gardens-bringing-communities-together>



Picture by Risorsa per Roma (RPR)

Contributing to economic benefits | Nabo Farm | Copenhagen, Denmark

Nabo Farm is a Zero Acreage Farm in Copenhagen (Denmark), located in an old auto repair workshop, that grows several types of vegetables such as sprouts and microgreens (watercress, radish, pea shoots, etc.). It sells its products to families and restaurants located near Copenhagen, through daily deliveries of fresh food. It is based on sustainable production methods that include hydroponics systems, no use of pesticides, zero waste from packaging, and low water consumption, as well as a short supply chain. These make it not only a good example of resource-efficient cultivation systems and reuse of abandoned buildings but also a good example of alternative markets and innovations in marketing/consumer relations.

<https://nabofarm.com/>



Pictures by Nabo Farm



Contributing to socio-cultural benefits | The Wonderful Garden | Dobrich, Bulgaria

The “Wonderful Garden” is a social enterprise that trains and employs young adults with disabilities in gardening and horticultural activities in Dobrich - a town in the North-East of Bulgaria. Over the years the initiative has grown from a rooftop flower garden to a municipality supported one-acre urban farm that produces a range of vegetables, fruit, and decorative tree saplings, as well as flowers. Products are sold on the town’s farmers’ market, as well as directly on the farm. According to feedback, employees are happy to have a stable job and also to receive training to develop specific skills. They are grateful that their work is appreciated in a society where people with disabilities are most often excluded from the opportunity to be financially independent. This initiative shows that UA can promote many socio-economic activities that involve different stakeholders and which contribute to improving social inclusion, physical and mental health, as well as to create local job opportunities for different social groups.

https://www.facebook.com/foundationstnicolay/?locale=bg_



Picture by The Wonderful Garden

Contributing to environmental and climate benefits | Orti Generali | Turin, Italy

Orti Generali is a community garden in the south area of Turin (Italy). It is situated within an urban park and is located 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 approach for the regeneration of degraded areas. It contributes to soil conservation and fertility, to increasing and managing green spaces, and to provide pollinator-friendly spaces, reducing pesticide use, and increasing urban biodiversity. Recently, the community garden has also launched a kiosk that offers vegetarian and vegan dishes, seasonal and local products. Orti generali organises many social and cultural activities that involve gardeners and different stakeholders that contribute to the improvement of social inclusion, cohesion, and interaction.

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



Picture by C. Cassatella

Contributing to food benefits | Grondig | Ghent, Belgium

Grondig is an urban farm located in the city region of Ghent (Belgium) that adopted a community-supported agricultural (CSA) approach. This farm produces vegetables, potatoes, (small) fruits by means of organic methods and also offers eggs and meat. It also offers guided farm tours and educational activities. Grondig adopts the method of self-harvesting by participants. Customers participate in the farm's activities and business. They can pick fruit and vegetables whenever they want, access the accounts, and use the space to organise activities and events. Each participant pays a yearly fixed contribution in order to ensure the farmers' income and share both potential risks and yields of the harvest. At the annual meeting, participants can also contribute in the decision-making process. This farm shows that UA can help to strengthen the sense of community, promote short supply chain and alternative food networks, improve local economies and farmers' incomes, as well as diversify agricultural activity.

<https://plukboerderijgrondig.be/site/index.php>



Picture by Lien Van den Eynde

Contributing to health and well-being benefits | Ninewells Community Garden | Dundee, Scotland

Ninewells Community Garden is located on the grounds of the Ninewells Hospital, in the city of Dundee (Scotland). The garden aims to encourage physical and healthy activities through therapeutic and rehabilitative gardening. It is open not only for patients and hospital staff, but also visitors, the local community, many volunteers, and different organizations. Current activities include the production of organic fruits and vegetables, honey, training for volunteers, healthy living, and eating and cooking workshops. The main health benefits of this UA initiative can be associated with prevention and treatment of illness, recovery, and rehabilitation, as well as healthier lifestyles and reduction of stress.

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



Picture by Ninewells Community Garden

Urban Agriculture Benefits Portfolio



The European Forum on Urban Agriculture (EFUA) is a 4 year project funded under the European Union's Horizon 2020 Research and Innovation Programme.

EFUA's objectives are to unlock Urban Agriculture's potential through achieving better networking, better knowledge, better deployment and better policies in the field.

Through establishing an Urban Agriculture (UA) Forum, it aims to develop new levels of stakeholder engagement to inform decision making and to mainstream Urban Agriculture into European, regional and local policy.

For more information, please visit:
<https://www.efua.eu/>

Colophon

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Thanks to **Ian Whitehead** for editing the final text, the members of EFUA Working Package 3 for their input and the examples across Europe for sharing photographs and additional information.

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Thanks Special
The authors are grateful to EFUA partners and WP leaders for their comments and their contribution to this report. EFUA partners provided useful suggestions on the methodological approach and valuable remarks on the interpretation of the main results.

Special thanks to Claudia Cassatella, Dona Pickard, Patricia Hernandez Lelli and Nele Lauwers for their support provided for case study descriptions and the collection of pictures.

We would also like to thank Trine Agervig Carstensen, Anne Madsbjerg, Bernd Pölling, Zoe Heuschkel, Petya Slavova, Svetla Stoeva, Claudio Bordi, Simon Stork, and Daniel Munderlein for their valuable feedback.

For any further details and references, please refer to following documents:

References **Cassatella, C., Gottero, E.** (2022), Type-benefit matrix, including set of indicators, and benefit leaflets, H2020 project n. 101000681, European Forum for a Comprehensive Vision on Urban Agriculture (EFUA), Deliverable D3.2., available from: <https://cordis.europa.eu/project/id/101000681/results>
Jansma, J.E., Veen, E.J., Vaandrager, L., Muller, D. & Berg, W. van den (2021). UA typology update, H2020 project n. 101000681, European Forum for a Comprehensive Vision on Urban Agriculture (EFUA), Deliverable 3.1, available from: <https://cordis.europa.eu/project/id/101000681/results>

The policy section includes some cases analysed in detail in the context of Task 4.2 "In-depth analysis of urban planning strategies towards UA" (Lead: Politecnico di Torino). The full results, which include guidelines to support city authorities in the integration of UA into public policies and planning tools were illustrated in Cassatella C., & Gottero E., et. al. (2022), Report on in depth-analysis on UAs role in urban planning, H2020 project n. 101000681, EFUA, Deliverable D4.2.



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This project has received funding from the European Union's Horizon 2020 research and innovation programme under Grant agreement No 101000681



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