

Role of Urban Farming in Achieving Sustainable Development Goals

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OPEN ACCESS

Keywords

Eco-friendly practices, green spaces, Sustainable Development Goals (SDGs), Urban Farming

How to cite this article:

Dharani, O. and Sasmitha, R. 2026. Role of Urban Farming in Achieving Sustainable Development Goals. *Vigyan Varta* 7 (08): 61-64.

ABSTRACT

Urban farming has become a major solution for creating sustainable and healthier cities. It includes growing crops and plants in urban cities through methods such as rooftop gardening, vertical farming, hydroponics, community gardening and microgreens cultivation. With increasing urban population, urban farming helps to improve food security by providing fresh food. It also supports reduce food transportation, reusing organic waste and increasing greenspaces in cities. It includes different methods of urban farming along with their benefits and challenges. Urban farming is closely linked with Sustainable Development Goals (SDGs), especially SDG2, SDG3, SDG8, SDG11, SDG12, SDG13 and SDG15, it helps to improve food security, promote good health, create employment opportunities, build sustainable cities, encourages responsible consumption, support climate action and protect land and biodiversity. Although urban farming faces limitations such as limited space, and water scarcity, it is emerging as an effective approach for building greener, healthier and sustainable urban environments.

INTRODUCTION:

According to the United Nations, the World population is projected to reach 9.7 billion by 2050. In 2018,

the United Nations reported that 55% of the World's population lived in urban areas, and this is expected to increase to 68% by 2050,



adding nearly 2.5 billion more people to cities, especially in Asia and Africa (United Nations, 2018). According to food and Agriculture Organization and several research studies, urban farming has become an important strategy for increasing population pressure, urban farming has become an important role for enhancing food security, environmental sustainability and healthy urban living. Urban farming refers to the cultivation of crops and rising of livestock within and around urban areas. It involves rooftop gardening, hydroponics, aquaponics, and community gardens (Orsini *et al.*, 2013). Urban farming includes several methods which help people grow crops within urban cities. In Vertical farming, where plants were cultivated in vertically stacked layers to maximize space. This method is mainly used in indoor environments with controlled temperature, light and water supply (Meena *et al.*, 2022). Rooftop gardening is another popular method in which vegetables, fruits, flowers and herbs are grown on the rooftops of buildings. It helps reduce urban heat, and provides fresh produce for households (Orsini *et al.*, 2013). Community gardening is practiced in urban areas where a group of people collectively cultivate crops in shared public or private spaces. This method encourages social interaction, teamwork, and awareness among urban areas (Santo *et al.*, 2016). Indoor farming is another method where crops are grown inside buildings under controlled environment such as hydroponics, aeroponics, and aquaponics are commonly used indoor farming to increase productivity and reduce soil dependence on soil. Hydroponics was a type of soil less farming method in which plants are grown using nutrient-rich water solutions. Hydroponics method saves water, and supports faster plant growth. Aquaponics combines fish farming with hydroponics, where fish waste provides nutrients for plants help purify the water. Aeroponics is another advanced method in which plants roots are

suspended in air and supplied with nutrient mist, allowing efficient use of water and nutrients (Meena *et al.*, 2022). Microgreens farming also one of the methods in cities due to its high nutritional value. These methods are economical, eco-friendly and suitable for people living in densely populated areas. Overall, different methods of urban farming promote to food security, environmental sustainability, and development of greener and healthier cities.

Urban farming helps in promoting sustainable development by supporting access to fresh and organic food, which helps in reducing food transportation costs, improving air quality and encouraging the recycling of organic waste. It also strengthens community participation and supports ecofriendly practices in urban areas (UNESCO, 2020). Modern technologies such as hydroponics, rooftop gardening, and vertical farming are making urban agriculture more efficient and resource saving, especially in densely populated cities where land availability is limited. Urban farming paves way for achieving sustainable global development as it contributes to sustainable food production, climate resilience and healthier urban environments and closely connected with Sustainable Development Goals (SDGs) adopted by United Nations. In 2015, United Nations adopted the 17 Sustainable Development Goals (SDGs) under the 2030 Agenda for Sustainable Development to achieve global social, economic, and environmental sustainability (United Nations, 2015). Urban farming contributes significantly to SDG2 (Zero Hunger), SDG3 (Good health and well-being), SDG8 (Decent work and Economic growth), SDG11 (Sustainable cities and communities), SDG12 (Responsible consumption and production), SDG13 (Climate Action), SDG15 (Life on Land). Despite its numerous benefits, urban farming also faces several challenges such as limited land availability, water scarcity, high initial

investment and lack of technical knowledge among urban areas. Therefore, urban farming increasingly recognized as an effective and sustainable approach for building greener, healthier, and more resilient cities while supporting the achievement of Sustainable Development Goals.

Achieving Urban Farming with Sustainable Development Goals (SDGs)

Urban farming contributes significantly to the following Sustainable Development Goals (SDGs) by encouraging Sustainable development in urban areas.

SDG 2: Zero Hunger – This goal aims to “End hunger, achieve food security and improved nutrition and promote sustainable agriculture”. Urban farming promotes food availability by supporting local production and fresh nutritious food which makes it more accessible to urban populations.

SDG 3: Good Health and Well-being – It aims to “Ensure healthy lives and promote well-being for all at all ages”. Urban farming directly helps this in fostering mental health, and promoting physical activity, while also improving community well-being.

SDG 8: Decent Work and Economic Growth – It aims to “Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all”. Urban farming acts crucial role by transforming cities into productive hubs, creating local employment opportunities and fostering entrepreneurship development within urban areas.

SDG 11: Sustainable Cities and Communities – It aims to “Make cities and human settlements inclusive, safe, resilient and sustainable”. Urban farming supports development of sustainable cities by creating green spaces, improving urban environments and promoting community.

SDG 12: Responsible Consumption and Production – It aims to “Ensure sustainable consumption and production patterns”. Urban farming helps in efficient utilization resources and promotes sustainable consumption practices. It also encourages the recycling of organic waste and the adoption of eco-friendly methods.

SDG 13: Climate Action – It aims to “Take urgent action to combat climate change and its impacts”. Urban farming helps in addressing climate change by decreasing carbon emission and the need for transportation of food and it helps in mitigating urban heat through green cover.

SDG 15: Life on Land – It focuses on “Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss”. Urban farming supports biodiversity and encourages green ecosystems within urban areas. It also reduces the dependency on rural land by growing food inside cities and it improves soil and uses empty city spaces in a useful way. Overall, it promotes a healthy environment and helps protect land and biodiversity.

Merits and Demerits in Urban farming

Merits

1. People can grow vegetables in small spaces like balconies and terraces to get fresh and organic food.
2. In small household, people use to cultivate their own vegetables at home using kitchen waste to save money.
3. While practicing the urban farming in urban areas, people can build strong relationships and conversation within the community.

4. It helps to create job opportunities by selling their produce in the market with affordable prices.

Demerits

1. It takes a lot of time to transport produce, and it may spoil easily which causes loss of money.
2. During summer, plants get hydrated quickly due to intense heat. So we should do watering every day to plants and keep hydrated.
3. People growing crops in cities may have limited knowledge about agriculture without proper training and support.
4. In urban areas it states urban farming is easy but it need sufficient money for equipment and time management.

CONCLUSION

Urban farming is an important practice which helps people grow fresh food in cities using small spaces and modern farming methods. It supports a healthy environment by reducing pollution, increasing green spaces, and encouraging eco-friendly activities. Urban farming also creates job opportunities, improve community participation, and helps to achieve sustainable Development Goals (SDGs). Although there are challenges such as lack of space, water scarcity, and limited technical knowledge. Governments and local communities should encourage urban farming by providing training, resources and support for sustainable practices.

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