

Role of Urban Horticulture in Food Security

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Abstract: -

Urban horticulture — cultivation of vegetables, fruits, herbs, and other edible plants within urban environments — has emerged as a strategic approach for enhancing local food security in the face of rapid urbanization, climate change, and supply chain disruptions. By utilizing vacant spaces, rooftops, balconies, and community plots, urban horticulture increases the availability and accessibility of fresh, nutritious produce close to consumers, reduces dependence on rural supply chains, improves dietary quality, and contributes to the social and economic well-being of urban communities. This article outlines the key features, components, workflows, sectoral applications, advantages, future strategies, and concludes with the significance of urban horticulture for sustainable food systems.

Key words: *Urban horticulture, food security, urban agriculture, sustainable food systems, community gardens etc.*

Introduction:

Urban horticulture refers to the cultivation of edible crops notably vegetables and fruits within cities and peri-urban areas to enhance food availability, nutrition, and local resilience. As urban populations expand, demand for fresh, nutritious food increases, while access to farmland decreases. Urban horticulture harnesses underutilized urban spaces like rooftops, vacant lots, balconies,

and public parks to grow food locally and sustainably. This practice directly addresses food insecurity by increasing the supply of fresh produce, shortening supply chains, and reducing vulnerabilities associated with long-distance food transportation, price volatility, and supply disruptions.

Key features and mechanisms

Localized Food Production: Food is grown within or near urban centers, increasing

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availability and access.

Space Efficiency: Utilizes small, diverse urban spaces — rooftops, balconies, vacant lots, and community gardens.

Short Supply Chains: Reduces time and distance from production to consumption, minimizing spoilage and transport costs.

Nutrient-Rich Output: Focuses on high-nutrient horticultural crops such as leafy greens and vegetables.

Community Engagement: Often involves community groups, volunteers, and households, enhancing social cohesion.

Important Components

1. Site Selection & Land Use:

Identification of suitable urban spaces for cultivation — vacant lots, rooftops, vertical surfaces.

2. Crop Selection:

Choosing high-yield and fast-maturing vegetable varieties suited for limited spaces.

3. Growing Systems:

Including traditional soil beds, container gardening, vertical farming, hydroponics, and community plots.

4. Water & Nutrient Management:

Efficient irrigation (e.g., drip, rainwater harvesting) and optimization of nutrients.

5. Harvesting & Distribution:

Harvesting produce at optimal maturity

and distributing locally to households and markets.

Work Flow (Describe How It Works)

1. Site Identification:

Assess potential urban spaces — community gardens, rooftops, balconies, and parks.

2. Planning & Design:

Determine layout, crop types, growing systems (soil-based or soilless), and resource needs.

3. Preparation:

Install infrastructure — raised beds, containers, vertical racks, irrigation systems.

4. Planting:

Sow seeds or transplant seedlings suited for short growth cycles (e.g., leafy vegetables).

5. Maintenance:

Regular watering, nutrient application, pest management, and monitoring of plant health.

6. Harvest & Distribution:

Harvest fresh produce and distribute locally through community markets, cooperatives, or direct household access.

Advantages

1. Improved Food Availability:

Urban horticulture contributes fresh produce to local markets, reducing reliance on rural supply chains.

2. Enhanced Nutrition:

Easy access to nutrient-rich vegetables improves dietary quality and public health.

3. **Reduced Food Cost & Waste:** Short supply chains reduce transport costs and spoilage.
 4. **Empowerment & Employment:** Community engagement and small enterprises create jobs and build skills.
 5. **Environmental Benefits:** Urban green spaces improve air quality, lower urban temperatures, and support biodiversity.
- nutritious vegetables and fruits, urban horticulture shortens supply chains, strengthens community resilience, promotes health, and supports socio-economic development. Expanded policy support and technological innovation can further amplify its contributions to sustainable, food-secure cities.

Future Strategy

Policy Integration: Urban planning should integrate horticulture as a key component of food security strategies.

Technological Innovation: Expand vertical farming, hydroponics, and controlled environment agriculture to maximize yields.

Community Programs: Enhance public participation through education, incentives, and support for neighborhood gardens.

Resource Efficiency: Promote water recycling, renewable energy, and sustainable soil amendments for urban farms.

Partnerships: Foster collaborations between governments, NGOs, schools, and private sectors to support urban horticulture.

Conclusion

Urban horticulture presents a viable, multi-benefit strategy to enhance food security in cities, especially under pressures of urban growth, climate change, and food supply disruptions. By increasing local production of

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