



Urban agriculture: A powerful tool for sustainable development

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Entire world is experiencing a tremendous increase in urbanization and rural to urban migration. The United Nations reported that during 2018, about 55 per cent of the world's population lives in urban areas and is expected to increase to 68 per cent by 2050. India which ranks number two (after China) in the list of countries by population faces similar challenges. By 2024, India is expected to be the most populous country in the world (UN DESA, 2017). Urbanization in India is growing at a faster rate than rest of the world (Hindustan Times, 2007). The World Bank reported that about 34 per cent of India's population now lives in urban areas which will further rise to 40 per cent in 2030.

As urbanization increases, many countries will face challenges in meeting the needs of their booming urban populations, including food and nutritional insecurity, lack of employment opportunities, environmental degradation and lack of other basic necessities like land, water, food, housing, education, health and transportation. With more percentage of the Indian population are expected to live in cities in future, these problems will continue to increase manifold in the days to come. Urbanization also leads to reduction in crop production as the agricultural lands are being replaced for industrial purposes and other urban uses.

Urban Agriculture (UA) is one of the solutions that are perceived globally to meet the challenges of the growing urbanization. In many countries of the world, especially in the developed countries, UA has played a significant role in ensuring food and nutrition security, employment opportunities and clean surroundings to the city dwellers. It has been touted by many researchers as a sustainable and secure option to feeding the urban mega-populations of the future (Montenegro de Wit, 2014).

Definition of urban agriculture: In simple term, urban agriculture is the growing, processing and distribution of food and other products through intensive plant cultivation and animal husbandry in and around cities. An industry that produces, processes and markets food and fuel, largely in response to the daily demand of consumers within a town, city, or metropolis, on land and water dispersed

throughout the urban and peri-urban area, applying intensive production methods, using and reusing natural resources and urban wastes, to yield a diversity of crops and livestock.

The most widely used and more integrated meaning of urban agriculture is an industry located within (intra-urban) or on the fringe (peri-urban) of a town, an urban centre, a city or metropolis, which grows or raises, processes and distributes a diversity of food and non-food products, reusing mainly human and material resources, products and services found in and around that urban area, and in turn supplying human and material resources, products and services largely to that urban area".

Benefits of urban agriculture:

Benefits based on community:

- Promotes social cohesion and social capital
- Creates a sense of belonging
- Creates we feelings
- Promotes community pride
- Raise awareness and conversations about local food
- Providing education and training opportunities for community children and youths about agriculture, food and nutrition
- Creates leisure and recreational spaces
- Beautification of the community surroundings
- Promotes better community waste management

Benefits based on health and nutrition:

- Access to variety of fresh, tasty, nutritious food at affordable prices
- Improve community food and nutrition security
- Creates opportunity for physical exercise
- Improved physical and psychological well-being
- Availability of fresh air
- Promotes recycling of waste
- Improves dietary habits
- Availability of food at all seasons.

Benefits based on socio-economic condition:

- Generation of employment and revenue
- Promotes entrepreneurial opportunities and innovation development

| Differences between agriculture in rural and urban area: | | | |
|---|---|--|--|
| Sr.No. | Particulars | Urban agriculture | Conventional/Rural agriculture |
| 1. | Farm types | Unconventional, partly without soil (rooftop, hydroponics, etc.), more specialized independent units acting in cluster, small holdings | Conventional, farms consisting of interdependent sub-units, large holdings. |
| 2. | Livelihood | Farming is often a secondary livelihood, urban farmers engaged on a part-time basis | Farming is a primary livelihood, farmers usually engaged on a full-time basis |
| 3. | Farmer type | Farmers have weak traditional farming knowledge | Usually 'born farmers'. Farmers have strong traditional farming knowledge |
| 4. | Products | Perishable products especially green vegetables, ornamental plants, dairy, poultry and pigs, mushrooms, etc. | Mainly staple crops, cattle, sheep, etc. |
| 5. | Cropping calendar | More year-round growing of crops | Seasonal periods |
| 6. | Production factors | High land price, land scarcity, higher costs of labour, lower costs of commercial inputs, availability of low cost organic wastes and wastewater | Low land price, lower costs of labour, high costs of commercial inputs, lack of irrigation and high irrigation costs |
| 7. | Social context | Few families engaged in farming, more heterogeneous, many external stakeholders with different interests, urban farmers are hardly organized | Majority of families engaged in farming, more homogeneous, rural farmers are more organized |
| 8. | Environmental context | Fragile, often polluted land and water resources | Relatively stable, land and water resources rarely polluted |
| 9. | Availability of research and extension services | Hardly available | More likely |
| 10. | Marketing | Near to markets, direct marketing to customers, high degree of local processing (including street foods), mainly local consumers | Distant markets, marketing through middlemen and marketing organizations, low degree of local processing, mainly non local consumers |
| 11. | Scale of production | Mostly small | Mostly large |
| 12. | Availability of alternatives | Variable | Limited |

- Reduction of cost of vegetables, fruits and other food items
- Increase family saving
- Increases property value
- Effective and efficient use of land and other resources
- Decreases food miles
- Provides learning activities for planning, food production and business.

Benefits based on environment:

- Reduction of greenhouse gases (GHGs) emissions
- Promotes cleanliness in the community surroundings
- Increase biodiversity of flora and fauna in the urban communities
- Waste reduction through proper recycling/reuse of organic wastes
- Reduction in use of harmful inorganic fertilizers and

pesticides

- Reduces carbon footprint due to lesser carbon emission and fuel consumption for transportation
- Helps prevent soil erosion and increase water infiltration and air purification
- Reduction of water, air and soil pollution
- Promotion and conservation of local varieties.

In most of the developed countries in the world, UA has becoming one of the key strategies for achieving urban community's overall economic, social, environmental and nutritional development. But in India, it has not been very popular among the city dwellers. With ever increasing urbanization in India, more emphasis should be given to urban agriculture by the city planners, researchers and the local and state governments for sustainable urban planning.

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