

Urban Foodscaping in India: Transforming Cities with Edible Landscapes

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Foodscaping is catching up in urban India pretty fast and many cities are seeing a steep climb towards more agriculture happening right inside the city premise. In some cases, middle-class households have begun to grow fruits and vegetables on their rooftops in cities like Bengaluru providing answers both for food safety concerns as well contributing towards greener urban spaces (Frazer, 2018).

India's urban areas understand the relevance of foodscaping, that is landscaping with edible plants. This provides a long-standing answer to the food security problem, increase city biodiversity and create healthier living spaces.

The article will take a deep dive in to the science of principles underlying foodscaping, its various advantages, realistic ways and means to implement foodscape design & development here within our urban Indian context along with some beautiful case studies from around our own cities. We will show how foodscaping can enhance ecological balance, nutritional security and economic benefits thus creating a comprehensive model of urban sustainability.

The Science behind Foodscaping

In ancient farms, food production was one of the many elements that found a place in daily living spaces. Early examples of this include the traditional kitchen garden and community orchard. The definition in recent times has developed to address issues of urbanism like food security, environmental sustainability and the formational design of cities. This is true, even if historical growing tended to be more about function and the contemporary foodscaping model also relates heavily on sustainability (Amore & Roy, 2020).

Foodscaping is a practice of combining edible plants in with traditional ornamental landscapes, that weaves functionality into the landscaping design to produce spaces which are both beautiful and useful (Fig. 1). It is based on scientific

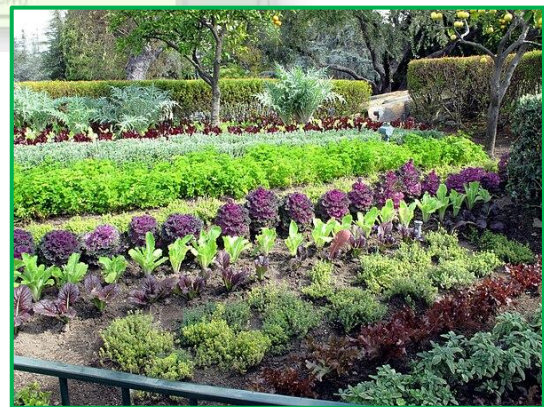


Fig.1. Pixie Hollow Garden in Florida, where edible landscapes feature green and purple kale and chard varieties in decorative designs (Foodscaping, 2024)

principles of ecology and sustainable agriculture that work to maximize the health, yield and environmental benefits grown from plants. The main focus is at designing multifunctional landscapes, that boost not only the attractive aspect of it but also guarantee fresh and healthy production (Sima *et al.*, 2010).

The foodscaping site plays a relevant role in enhancing biodiversity and ecosystem services. It supports many beneficial organisms and promotes biodiversity through including a wide diversity of plants in the landscape. It results in a variety of microhabitats which supports pollinators and beneficial insects that are important to the health and productivity of your plants. Such diversity in plant life supports a range of niches for organisms, allowing the ecosystem to remain stable and robust (Boyer *et al.*, 2019).

Adding composting and mulching in foodscaping help improve your soil structure plus fertility. These practices are factors in the increase of microbial activity, nutrient availability and water holding capacity which all combine to result in better plants producing extremely robust yields of crop output (Ravichandran *et al.*, 2022).

Foodscaping is more than just making urban areas look good; it has offered a source of fresh foods, habitats for local plants and animals, improved air quality and promoted sustainability. Combining scientific paradigms with indigenous traditional knowledge, these approaches offer a framework of urban agriculture that is beneficial to humans and the environment as whole.

Implementing Foodscaping: Methods and Best Practices

It is essential for any foodscape to be perfectly located and designed in order that it could thrive. The site needs abundant sun, good soil and a source of water. In a foodscape, the suitable vegetables and companion plants are essential. The plants chosen must therefore be indigenous and tolerant to changes in the local climate as well as soil suitability (Matu *et al.*, 2020).

Foodscaping is a form or blend of edible and ornamental landscaping so you need to really think about how this aesthetic / function dichotomy fits into your plan. Thoughtful design and placement of plants can serve to distinguish a home foodscape as well as improve its function. That means that geometric patterns or designs of layered planting can create both beautiful and productive garden areas. Raised beds, vertical gardening and container potting are all good ways to make the most of each square foot (Sullivan *et al.*, 2014; Touliatos *et al.*, 2016; Miernicki *et al.*, 2018).

Modular raised beds are a perfect suit with geometric modules to create desired shapes and pleasing aesthetic (Fig. 2). These can save maintenance time, warm the soil in winter and better drainage (use of as planted materials) useful for urban/peri-urban foodscapes (Hangan *et al.*, 2023). Maintaining the soil health and having continuous harvest throughout phase of year requires planning for crop rotation during seasonal changes. Crop rotations to prevent soil nutrient depletion and control pests, along with a part of planting for fresh vegetables the year around (Amore & Roy, 2020).

Biological control and integrated pest management (IPM) are applied to address the pests and diseases under sustainable environment. Promoting helpful insects, releasing natural enemies and practising organic pest controls were effective in providing a plant defence



Fig.2. Colourful and attractive vegetable crops grown in raised beds (Landscape East & West, n.d.)

while limiting the ecological strain (Boyer *et al.*, 2019). It illustrates the sophisticated simplicity that characterizes so many of today's foodscaping designs which reflect this melding of traditional landscaping beauty with a more modern embrace of sustainable growing practices. A well-planned foodscape, utilizing appropriate plant selections that implements various design principles into a sustainable landscape can offer multitudes of production and beauty for anyone.

Health, Environmental, and Economic Benefits

Homemade garden-fresh vegetables provide phytochemicals like antioxidants, vitamins and minerals for better health. It is now well known that phytochemicals, polyphenols flavonoids and carotenoids play an important role in the prevention of chronic diseases such as cardiovascular diseases (CVDs) or cancers (Yamagata & Yamori, 2019). Moreover, consistent consumption of vegetables is linked to better health and lower rates of obesity as well as substantial non-communicable diseases (Kibr, 2022).

Foodscaping offers a way of utilising your land in an environmentally friendly manner, making use of sustainable gardening methods that are good for the ecosystem as well as minimise waste. Irrigation methods used are very efficient techniques such as drip irrigation where necessary complemented with rainwater harvesting to save water resources and at the same time irrigating plants depending on how fast they can receive moisture back. Especially so in urban areas where water resources may be constrained, these methods are highly successful.

Using beneficial insects such as ladybird beetles as well as organic deterrents help control pests on the homestead and reduces reliance upon chemical pesticides. This method only conserves the ecology, but also makes sure products healthier with an absence of harmful substances (Boyer *et al.*, 2019).

Foodscaping is more economical to traditional landscaping and brings economic benefits at both the household as well as community level. Growing vegetables in the garden can save a significant amount of money on groceries. Foodscaping households also typically spend less money on food than those that purchase most of their items (Buabeng & Aduteye, 2022).

Local food markets and community-supported agriculture (CSA) programs deliver an economic boost to localities through perishable, locally-grown products. Such initiatives open channels for local farmers and grow food security within the group (Chen *et al.*, 2019).

One noteworthy attribute of foodscaping is that it seamlessly brings together health, sustainability and profitability within the urban agriculture umbrella. With a few sustainable practices and an emphasis on local, fresh produce, our urban lands can be shifted to productive landscapes for the better.

Case study

Brie Arthur's Foodscaping Journey

Foodscaping, the integration of edible plants into traditional ornamental landscapes, has seen significant success and popularity in recent years. A particularly notable example is the work of Brie Arthur, a horticulturist and advocate for the foodscape movement. Brie Arthur turned her one-acre land in North Carolina into an edible landscape that fulfills almost 70% of her family's food needs. It started as a way to save on the grocery bill and comply with restrictive homeowner association (HOA) regulations that limited traditional vegetable gardening. Her yard design allowed her to showcase a buffet of diverse tasty plants which can simply replace the dreadful monotonous rowed plants. Only after six months, she managed to win an award titled "Yard of the Year" (Jewell, 2019).

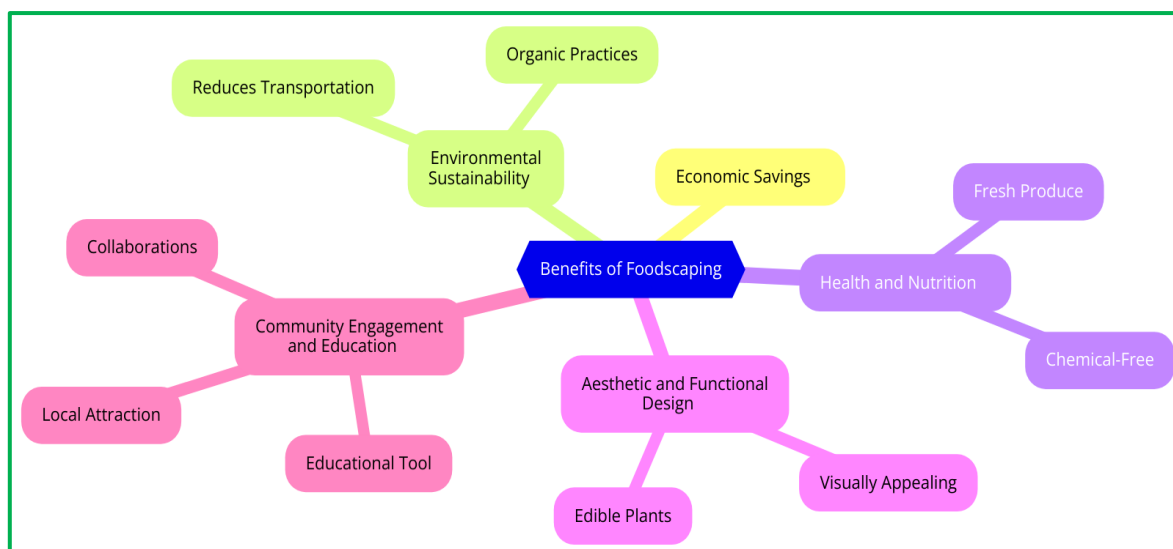


Fig.3. Benefits of foodscaping

Arthur's foodscape includes a wide range of plants like sweet potatoes, garlic and pumpkin as well as crops such barley and wheat. She has even done a trial of growing edibles flowers like dahlias and practices sustainable techniques by using the grains as food and leftover straw that serves soil amendment. This alternative means a saving on the grocery bill and doubles as an aesthetically pleasing and pragmatic space which allows for food production all year round. The benefits of foodscaping are presented in the Fig.3.

The experience of Brie Arthur demonstrates how to establish a foodscaping success by combining edible plants with conventional ornamental landscapes. The benefits of foodscaping range from economic savings and environmental sustainability to positive health outcomes, increased biodiversity in the community. With the trend, coming up more people and communities can search for reasons to produce those beautiful edible gardens (Jewell, 2019).

Conclusion

This approach of foodscaping in urban India is multi-faceted and addresses the challenges faced by cities. Combining the best of sustainable farming and decorative landscaping, permaculture makes food forests look beautiful because it enhances biodiversity, increases resilience to climate change, promotes localisation or community self-reliance. With foodscaping, you get a nutrient-rich soil while local ecosystems continue to thrive and less reliance on storehoused produce due scientific principles used in its design. As such, the rise of foodscaping in urban areas could work to downshift cities from grey status into more green and sustainable visions which bring with them economic, environmental and health benefits too. This comprehensive approach enhances personal health and strengthens communities at the same time.

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