

Terrace Gardening: A Sustainable Yet Economic Approach.

Abstract

The study emphasises the importance of terrace gardening in providing fresh, seasonal, and, most importantly, chemical-free vegetables for everyday family requirements. It also tackles the problem of odorous, untouchable unwanted kitchen garbage by converting it into valuable organic manure that may be used as a low-cost, environmentally acceptable input for organic terrace planting. This study was conducted with ultimate aim to work out the cost and returns incurred in maintaining the terrace garden. Fifty sample respondents who were practising terrace gardening in Hyderabad were chosen for the study. Respondents who were practicing terrace gardening for the past 5 years were selected randomly from the list obtained from Horticulture Training Institute. The results inferred that 39 per cent share of establishment cost was spent on purchase of good quality seeds and saplings as the respondents were more inclined towards food safety. The net income accrued to Rs 9462 and it was interesting to note from the sample respondents that, personal satisfaction derived from having one's own garden can't be compared with economic returns obtained from the garden.

Keywords: Terrace Garden, pandemic, sustainability, urbanization, psychological well-being

Introduction

Agriculture is anchor of the global economy as it is the main source of livelihood throughout the years. During the years, agriculture's contribution in Indian economy has logically declined to under 15%, because of the great development phase of industrial and service sectors. Urbanisation all around the World is ineludible condition. By 2050, 2/3rd of the worlds projected 9.2 billion population will be living in urban areas.

The urban population in India which stands at 377 million is expected to grow by 404 million by 2050(World Urbanization prospects-2014). Within the state of Telangana, Hyderabad accounts for the largest share of urban population 28.9% of state urban population (Telangana Socio-economic Outlook ,2021). With increasing urbanization there is increasing burden on rural agriculture to feed the urban population. People living in urban areas have much less control over the supply and quality of food they consume as compared to the rural counterparts. Unfortunately, indiscriminate use of chemicals and pesticides, use of improperly treated waste water for cultivation of vegetables is a bellyache for urban dwellers.

Amidst Covid-19 pandemic, many urbanites being caged in their homes, has taken a toll over their mental health. They started incorporating plants in their living spaces and eventually started growing leafy greens and vegetables. There is a great need to break monotony and provide relaxation for tiring mind. Thereupon, terrace gardening is gaining momentum increasing the availability of fresh and chemical free vegetables and fruits for urbanites with minimal investment.

Terrace garden is a garden in which vegetables, fruits, ornamental and medicinal plants are grown on terraces. It reduces the poverty and food insecurity arising from urbanisation, at the same time improving the health of urbanites and preserving the environment (FAO, 2016). There are many benefits of terrace gardens such as utilisation of vacant terraces, provision of fresh fruits and vegetables, recycling of kitchen waste, help in maintaining ecological diversity by attracting birds and insects, enhanced aesthetic pleasure, helps in moderating micro climate of cities etc.

Terrace gardens gives rustic pleasure to urbanites. It also provides an opportunity for creativity as well as psychological well-being of city dwellers (Kandalkar P,2021). All over the world terrace gardens are customary elements of modern cities. Therefore, the present study was undertaken to work out the costs and returns of terrace gardens.

Methodology

The study was conducted in Hyderabad GHMC (Greater Hyderabad Municipal Corporation) area. The main strategy behind this study was to understand the origin of terrace gardens in Hyderabad. Fifty sample respondents who were practicing terrace gardening from the past 5 years are selected randomly, from the list obtained from Horticulture Training Institute (Nampally). Data regarding socio-economic status, area allocated for terrace garden, cost incurred for establishment of garden returns in terms of yield was collected through personal interview during 2021-2022 using structured questionnaire. The collected data was tabulated and analysed using economic tools. To obtain meaningful results, percentages and averages were computed.

Results and discussion

The respondents selected for the study were mostly females as they are more concerned about food safety and family health. It is evident from fig.1 that a diverse range of food crops may be grown in terrace gardens, ensuring nutritional security as well as local culture, heritage, and biological diversity. Staggered sowing is commonly practiced to assure year-round fresh produce availability. The most common crops grown in terrace gardens by the sample respondents are tomato, chili's, brinjal, leafy greens, and gourds in summer.

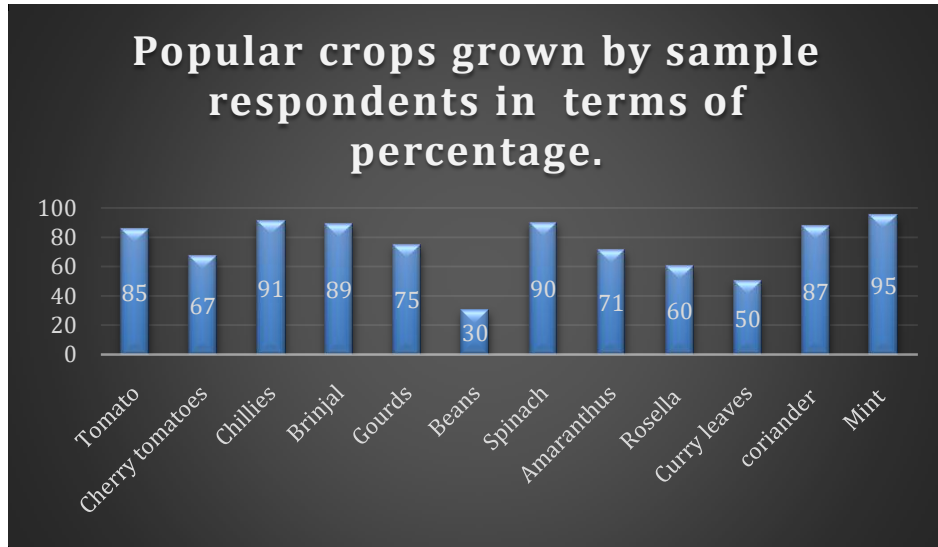


Fig.1 Most popular crops grown by sample respondents.

The initial investment incurred for establishing terrace garden is presented in Table 1. According to the findings, the total establishment cost was Rs 5170 for 100 square yard area. Of the total cost, seeds and saplings accounted to as high of 39 per cent, as many respondents were health conscious and they wanted to purchase good quality seeds. The other establishment cost like purchase of pots and soil accounted to 24 and 19 per cent respectively.

Table 1: Average cost incurred for the establishment of a terrace garden.

S.no	Inputs	Unit	Quantity	Cost	Per cent
1	Pots	No.	15	1250	24.18
2	Buckets/Drums	No.	15	250	4.84
3	Red soil	No.	35 bags	1000	19.34
4	Secateur	No.	1	350	6.77
5	Kurpi	No.	1	120	2.32
6	Seeds and Saplings	No.	-	2000	38.68
7	Training programmes	No.	2	200	3.87
	TOTAL COST			5170	100

Table 2: The expenses incurred for maintenance of terrace garden.

S.no	Inputs	Cost	Per cent
1	Seeds	250	8.77
2	Saplings	300	10.53

3	Manures	--	
a	vegetable & fruit peels	--	
b	Egg shells	--	
c	Jeevamrutha /bheejamrutham/panchagavya	300	10.53
4	Cow urine & cow dung	300	10.53
5	Buttermilk	200	7.02
6	Garden meets/programmes/melas	1000	35.09
7	Miscellaneous expenses	500	17.54
	TOTAL COST	2850	100.00

The total annual cost incurred for maintaining terrace garden accounted to Rs 2850. Out of the total cost, garden meets or melas accounted to 35 per cent followed by purchase of saplings and panchagavya of 11% each. Majority of the respondents purchased seeds at the time of start of gardening and from the next consecutive cycles used their own seeds.

Seed exchange is an extraordinary concept that is being followed, therefore seed material is exchanged free of cost among fellow gardeners. Most of the households recycled their kitchen waste and used it for increasing fertility of soil. Kitchen waste generated in household like tea, egg shells, vegetables and fruit peels etc., are composted in large bins with dried leaves and butter milk. Consequently, this mixture turns into precious food for crops. Cow urine, neem oil and soap nut water are diluted separately and sprayed for controlling any pest and disease infestation.

Majority of the respondents started growing leafy greens followed by vegetables. With increasing yield of vegetables and leafy green they reduced the purchase from the market. In a month each family could harvest around 3 kgs of tomato, 4-5 kgs of brinjal ,3-4 kgs of gourds. As a result, income is saved to the tune of Rs.1026 per month. The results are in similarity with the findings of Naveena (2017) who concluded that households were able to harvest enough produce, thereby saving income of Rs 879 per month. On an average respondents were able to consume their home-grown food for 4 days per week.

Table 3: Monthly output from terrace gardens in form of kgs

Crops	Quantity of produce in	Market price of produce (Rs)	Income saved on buying in (Rs)

	(Kg)		
Tomato	3.56	40	142
Cherry tomatoes	2.12	80	170
Chillies	0.9	40	36
Brinjal	5.42	40	217
Gourds	4.47	25	112
Beans	0.8	80	64
Spinach (bunches)	5	15	75
Amaranthus(bunches)	3	10	30
Rosella (bunches)	4	15	60
Curry leaves	4	15	60
coriander (bunches)	3	10	30
Mint (bunches)	3	10	30
TOTAL COST			1026

Table 4: Costs and returns structure of terrace gardens

Particulars	In Rupees
Total cost	2850
Gross returns	12312
Net returns	9462

A terrace garden at an average cost of Rs 2850 provides fresh, pesticide free vegetables throughout the year and thus saves respondents earnings on purchase of vegetables to an extent of Rs 12312 per annum. The net returns accounted to Rs 9462.

Conclusion

This study found out that terrace gardening was environmentally and economically viable approach. Thereby ensuring year-round access to fresh leafy greens and vegetables to urban dwellers on their very own spaces. The main motivation for these gardens is concern about

the quality of vegetables available in urban markets, as well as the recycling of household waste.

References

- [1]. <https://www.un.org/en/about-us>.
- [2]. <https://telangana.gov.in/PDFDocuments/Telangana-Socio-Economic-Outlook-2021.pdf>.
- [3]. <https://www.fao.org/home/en>
- [4]. Kandalkar P. "Terrace gardens" utilization of terraces for green future: a review. An international journal of contemporary studies. 2021; 6(2): 1-8.
- [5]. Naveena KP and Sahana RT. Organic Terrace Gardening, A New Vista in Bringing Back to Traditional Food System: Economic Issues. The Journal of Rural and Agricultural Research.2017; 17(2): 11-14.
- [6]. Lal, R. Home gardening and urban agriculture for advancing food and nutritional security in response to the COVID-19 pandemic. International Society for Plant Pathology and Springer Nature B.V. 2020. 12: 871–876.
- [7]. Bhatt, C and Paschapur, A. Urban agriculture: The savior of rapid urbanization. Indian farmer.2020; 7(1): 1-9.