P-ISSN: 2618-0723
E-ISSN: 2618-0731

NAAS Rating: 5.04
www.extensionjournal.com

International Journal of Agriculture Extension and Social Development

Volume 7; Issue 10; October 2024; Page No. 15-19

Received: 19-07-2024
Accepted: 29-08-2024

Indexed Journal
Peer Reviewed Journal

Views on urban agriculture (UA) benefits: A perspective from Thiruvananthapuram's urban non-agricultural practitioners

[1]Riza Mathew and [2]Sreedaya Gopinathan Sarojini

[1]Ph.D. Scholar, Department of Agricultural Extension Education, College of Agriculture, Vellayani, Kerala Agricultural University, Kerala, India

[2]Associate Professor and Head, Training Service Scheme, Vellayani & Associate Director of Extension, KAU (SZ), Thiruvananthapuram, Kerala, India

DOI: https://doi.org/10.33545/26180723.2024.v7.i10a.1182

Corresponding Author: Riza Mathew

Abstract

The study was conducted in twenty wards of Thiruvananthapuram Corporation in Kerala during 2023-24 to analyze the perception of urban non-agricultural practitioners toward the benefits of urban agriculture. The ex-post-facto research design was adopted for the study. A total of 40 urban non-agricultural practitioners were selected using a simple random sampling technique from the 20 wards of Thiruvananthapuram Corporation. The personal interview method was used to collect data, and appropriate statistical tools were applied to analyze the data. The results indicated a predominantly positive overall perception of urban agriculture benefits among urban non-agricultural practitioners, with 90% of respondents holding a perception of either "Good" or "Better." The mean score of 82.80 suggests that the respondents are generally aware of the multifaceted advantages of urban agriculture. Regarding the social benefits of urban agriculture, the majority of respondents (60.00%) had a good perception, followed by 27.50% who had a better perception. Similarly, the majority of respondents (62.50%) held a good perception of economic benefits, while 22.50% had a better perception. With regard to health benefits, 60.00% of respondents had a favorable perception rated as good, while 20.00% showed an equal balance of both good and poor perceptions. In terms of the environmental benefits of urban agriculture, 67.50% of respondents had a good perception, while 22.50% had a better perception.

Keywords: Urban agriculture, urban non-agricultural practitioners, perception, urban agriculture benefits

Introduction

Urban farming can be seen as a strategic solution to address some of the pressing challenges faced by rapidly growing urban areas, including food and nutritional insecurity, environmental degradation, and socio-economic inequalities. It has emerged as a pivotal solution and a catalyst for enhancing the well-being of urban residents, encouraging greater participation in farming activities within their urban settings. Urban agriculture presents a promising opportunity to contribute to more sustainable and resilient urban communities, even amidst city expansions and resource constraints. Integrating agricultural practices into the urban environment not only serves as a means of local food production but also promotes the adoption of circular economy strategies at the city level. This approach helps close energy and mass loops while supporting the restoration of natural cycles and enhancing the environmental services of ecosystems.

Urban agriculture is a localized food system where the production, processing, distribution, access, consumption, and disposal or recycling of food take place within and around urban areas (Smit *et al.*, 1996) [22]. This practice can help create a better micro-climate, conserve soil, reduce waste in cities, and enhance nutrient recycling. Additionally, it can improve water management, biodiversity, the O_2-CO_2 balance, and raise environmental awareness among city residents (Deelstra and Girardet, 2000) [7]. Agricultural activities in urban settings can also enhance the value and quality of life by promoting economic and socio-cultural benefits through the cultivation of plants and animals in various urban spaces (Viljoen *et al*., 2005; Mougeot, 2006) [26, 15]. A key characteristic of urban agriculture is not just its geographical location but also its integration into the city's economic, social, and ecological systems (Wilson, 2009) [28]. While urban farming may not generate sufficient food to fully replace conventional agriculture, it can significantly enhance food security in urban areas both systematically and in terms of emergency preparedness (Darcel *et al*., 2019) [6]. Perceptions regarding the significance of personal food production indicate that urban farming households view this practice as vital for their survival (Omondi *et al*., 2017) [17]. Urban agriculture has the potential to empower communities by fostering collaboration among institutions and engaging them in community development efforts (Almeida *et al*., 2006) [1]. Urban green spaces are well recognized as a nature-based solution that supports, among other things, social cohesion (Peters, 2010) [18], climate change mitigation and adaptation (Kabisch *et al*., 2016) [10],

and healthy urban living. According to findings by Ramaloo *et al*. (2018) [21], gardeners were able to achieve some economic savings through their own food production and community food exchange.

Integrating urban agriculture into city planning offers a promising advantage for creating a resilient urban environment and improving urban residents' livelihood options. Although there is a developing area of inquiry into urban farming and its effects, much of the attention has been directed towards the experiences and outcomes of urban farmers and agricultural practitioners. This often neglects the perspectives of non-agricultural urban residents, who constitute the majority of city populations. Despite not being directly involved in farming activities, non-agricultural practitioners still stand to gain numerous benefits from urban agriculture initiatives. Understanding the perceptions of urban non-agricultural respondents is essential for the successful integration and expansion of urban agriculture projects within urban planning frameworks. By assessing their insights on social, economic, health, and environmental benefits, this research aims to provide a comprehensive evaluation of how urban agriculture is perceived beyond those directly involved in it. The results of this inquiry are needed for policymakers, urban planners, and stakeholders who aim to enhance public support for urban agriculture initiatives and ensure their long-term sustainability.

Methodology

The study was conducted in Thiruvananthapuram Corporation of Kerala state during 2023-24. Thiruvananthapuram Corporation was selected purposively because, it is the largest Urban Local Body by area and population in Kerala (AMRUT, 2017) [2]. The twenty wards selected from Thiruvananthapuram corporation were Sreekariyam, Cheruvaikal, Ulloor, Edavacode, Chellamangalam, Chempazhanthy, Pwodikonam, Njandoorkonam, Kinavoor, Nalanchira, Kudappanakunnu, Pathirapally, Chettivilakam, Mudavanmughal, Thrikannapuram, Nemom, Ponnumangalam, Pappanamcode, Estate, Punchakari and Akkulam. Simple random sampling was employed to select two urban non-agricultural practitioners from each of the selected wards constituting a sample size of 40 urban non-agricultural practitioners.

Table 1: Perception of urban non-agricultural practitioners on the social, health, economic and environmental benefits of urban agriculture

Sl.no	Statements	SA	A	SWA	DA	SDA
I	**Social benefits**					
1	I believe that urban food systems can create a sense of community bonding					
2	I feel that urban agriculture can enhance the esthetic appeal of neighborhoods					
3	I feel urban agriculture can serve as a platform for learning experiences					
4	I think urban green spaces can be safe areas for recreation					
5	I feel sharing surplus produce with others can improve attachments and cooperation					
II	**Health benefits**					
1	I think urban agriculture can help me improve my daily consumption of fresh fruits and vegetables.					
2	I feel that urban agriculture can be a strategy to enhance physical activity					
3	I believe that participating in urban agriculture can improve mental health					
4	I think urban agriculture can provide more access to safe, organic and nutritional food sources					
5	I feel urban farming can raise awareness about healthy eating practices					
III	**Economic benefits**					
1	I think urban agriculture is one of the best options for generating income					
2	I believe that urban agriculture can be an important job opportunity for any unemployed urban resident					
3	I feel urban agriculture has a major role in strengthening the local economy					
4	I feel that engaging in urban agriculture can open up many business opportunities					
5	I think practicing urban agriculture can help me to save money on food expenses					
IV	**Environmental benefits**					
1	I believe urban farming lowers carbon emissions through reduced food transportation.					
2	I believe that urban greenery can filter pollutants from air					
3	If I engage in urban agriculture, I can contribute to biodiversity preservation					
4	I feel urban farming practices such as composting can improve soil health					
5	I think urban green spaces can provide freshness to urban environment					

In the context of this study, perception is operationally defined as the clear understanding and awareness of the benefits of urban agriculture held by urban non-agricultural respondents. It encompasses how individuals interpret and make sense of urban agriculture and its benefits mainly social, economic, environmental and health. Recognizing that perception can vary significantly among individuals due to differing backgrounds and experiences, this study seeks to capture a holistic view of how urban non-agricultural practitioners perceive urban agriculture. Perception of urban non-agricultural respondents was measured by the procedure developed by the researcher. To systematically measure perceptions, four main dimensions namely, social benefits, health benefits, economic benefits and environmental benefits were identified based on a thorough review of existing literature and discussions with subject matter experts. In total, 30 statements were initially formulated to reflect these dimensions. The statements were carefully edited and refined in accordance with established criteria proposed by Edwards (1969) [8] and Thurstone and Clave (1929) [24]. These criteria emphasize the importance of clarity, relevance, and the ability of the statements to effectively capture the perceptions of respondents regarding the benefits of urban agriculture. To assess the relevance of

each statement, they were evaluated by judges using a five-point scale: 'Most relevant,' 'Relevant,' 'Somewhat relevant,' 'Less relevant,' and 'Not relevant,' with corresponding scores of 5, 4, 3, 2, and 1. The statements were analyzed based on their relevance scores, and only those with a relevancy score of 80 or above were included in the study. As a result, 20 statements were selected from the total 30 statements, with 5 statements assigned to each of the four dimensions. These 20 positive statements were then administrated to respondents, who rated them on a five-point scale: 'Strongly agree,' 'Agree,' 'Somewhat agree,' 'Disagree,' and 'Strongly disagree,' with scores of 5, 4, 3, 2, and 1, respectively. The arbitrary scale ranged from a minimum of 20 to a maximum of 100. Based on the scores obtained across all benefits of urban agriculture measured in the scale for urban non-agricultural respondents, they were categorized into three categories of perception namely poor, good and better based on mean and standard deviation.

Results and Discussion

Table 2 and figure 1 represents the data on the overall perception of urban non-agricultural respondents regarding the benefits of urban agriculture. The majority of respondents (50%) fall into the good category, followed by 40% in the better category, and 10% in the poor category. The scores range from 58 to 93, with an average score of 82.80, indicating a generally favorable attitude toward urban agricultural practices. The greatest percentage of respondents exhibiting a good perception, followed by those with a better perception, highlights a rising recognition of urban agriculture's multifaceted benefits, including improved access to fresh produce, environmental improvements, and community engagement. These findings are consistent with earlier studies on urban agriculture that project the role of these farming practices in supporting urban food systems and improving community well-being. Many individuals participate in urban farming due to their passion for gardening, as it offers them a space for cultivation, access to fresh food, and opportunities for social interaction (Corrigan, 2011) [5]. In certain cases, urban agriculture has become essential for the survival of citizens, providing financial benefits. Additionally, it enhances food security for farming households in various contexts (Poulsen *et al*., 2015) [20].

Table 2: Overall perception of urban non-agricultural practitioners regarding benefits of urban agriculture

Sl. No	Categories	Frequency	Percentage
1	Poor	4	10.00
2	Good	20	50.00
3	Better	16	40.00
	Total	40	100
Min=58, Max=93, Mean=82.80, SD=8.18			

Table 3 and Figure 2 present data on the perceptions of urban non-agricultural respondents regarding the social, economic, health, and environmental benefits of urban agriculture. The results reveal significant insights into the multiple role of urban agriculture in the urban environment. The analysis shows that a large proportion of respondents view urban agriculture positively across various benefits.

Table 3: Distribution of urban non-agricultural practitioners based on the perception regarding social, economic, health and environmental benefits of urban agriculture

Sl. No.	Benefits	Categories	Frequency	Percentage
1.	Social Max=25, Min=16 Mean: 21.55 SD: 2.80	Poor	5	12.50
		Good	24	60.00
		Better	11	27.50
2.	Economic Max=25, Min=17 Mean:20.77 SD: 2.01	Poor	6	15.00
		Good	25	62.50
		Better	9	22.50
3.	Health Max=25, Min=11 Mean: 19.62 SD: 3.23	Poor	8	20.00
		Good	24	60.00
		Better	8	20.00
4.	Environmental Max=25, Min=14 Mean: 20.85 SD: 2.76	Poor	4	10.00
		Good	27	67.50
		Better	9	22.50

Social benefits: The majority of respondents (60.00%) had a good perception regarding the social benefits of urban agriculture, while 27.50% had a better perception. This reflects an increasing acknowledgment of urban agriculture as a means of fostering community connections, social interactions, and cultural engagement. Only 12.50% of respondents exhibited a poor perception. The fact that the majority of respondents demonstrated a good perception, followed by those with a better perception of the social benefits in this study, suggests that even non-agricultural respondents recognize the importance of urban agriculture in strengthening communities and enhancing social cohesion. Urban agriculture can positively influence activism, promote gender equality, enhance social cohesion and inclusion, support education, and help preserve cultural heritage. It fosters a collective sense of responsibility toward the local food system, leading individuals to reflect on themselves and their neighbors, ultimately resulting in satisfaction with their mutual achievements (Postek *et al*., 2021) [19]. Urban agriculture can contribute to the social inclusion of marginalized groups while also boosting their self-esteem, self-management skills, and entrepreneurial abilities (Bailkey *et al*., 2007) [3]. Even sack gardening has enhanced farmers' social capital by strengthening connections between farmers and their non-farming neighbors, promoting improved social networks among participants in gardening organizations, and fostering a greater sense of community (Galleher *et al*., 2015) [9].

Economic benefits: The perception of economic benefits is similarly positive, with 62.50% of respondents had a good perception regarding the economic benefits of urban agriculture, while 22.50% had a better perception. Around 15% of respondents held a poor perception. The favorable perception may arise from the understanding that urban agriculture can provide economic benefits through increased access to fresh produce and potential income generation from selling surplus crops. Respondents may perceive urban agriculture as a means to strengthen local economies by creating jobs and reducing food costs for urban residents, thereby enhancing overall financial stability. Many individuals in developing countries are increasingly

embracing urban agriculture as a direct means of generating income by managing their own businesses (Khan *et al.*, 2020) [11]. The most frequent type of urban agriculture encountered is the family farm, combining production for self-consumption with sales on the market to raise income (Moustier & Danso 2006) [16]. Urban agriculture plays a crucial role in providing supplementary income and serves as a key component of the livelihood strategies for many individuals (Thys *et al.*, 2006) [25]. It has the potential to improve living conditions by facilitating direct access to food and increasing food availability, which in turn can generate revenue through the sale of agricultural products (Warren *et al.*, 2015) [27].

Health benefits: Regarding health benefits, 60.00% of respondents had a favorable perception rating of good while 20.00% exhibited both good and poor perceptions equally. The positive perception may be due to the belief that urban agriculture can enhance mental and physical health by offering access to nutritious food, encouraging physical activity, and alleviating stress through interaction with green spaces. Homegrown foods significantly increase the availability of food within a household, helping to prevent hunger and malnutrition. Access to fresh, locally grown produce, especially fruits and vegetables, enhances the nutritional status of household members, which in turn improves their overall health. For particularly disadvantaged households, direct access to food often enables them to enjoy a more varied diet (Stewart *et al.*, 2013) [23]. Participation in urban agriculture can contribute to improved disease management through better nutrition and access to home-grown medicinal plants, increased physical activity, reduced reliance on gifts and food assistance, and heightened self-esteem (Lock & de Zeeuw, 2001) [13].

Environmental benefits: The majority of respondents (67.50%) had a good perception regarding the environmental benefits of urban agriculture, while 22.50% had a better perception. The favorable perception may be attributed to the respondents' belief that urban agriculture systems can enhance urban biodiversity and offer essential ecosystem services such as pollination, pest control, and climate resilience. This includes a more diverse vegetative structure, an increase in native plant species, and a reduction in urban impermeable surfaces. Green spaces contribute to the creation of an efficient, localized, and stable food system that promotes the development of sustainable urban environments by cutting down food miles and reducing carbon emissions. Additionally, they enhance carbon sequestration and help lower greenhouse gas emissions (McDougall *et al.*, 2019) [14]. Urban agriculture is advocated as a viable solution for combating climate change, as it can reduce greenhouse gas emissions by shortening the food supply chain and minimizing both quantity and quality losses associated with long-distance transportation. Studies have shown that urban agriculture boosts food production, lowers greenhouse gas emissions (Kulak *et al.*, 2013) [12], and supports biodiversity (Clucas *et al.*, 2018) [4].

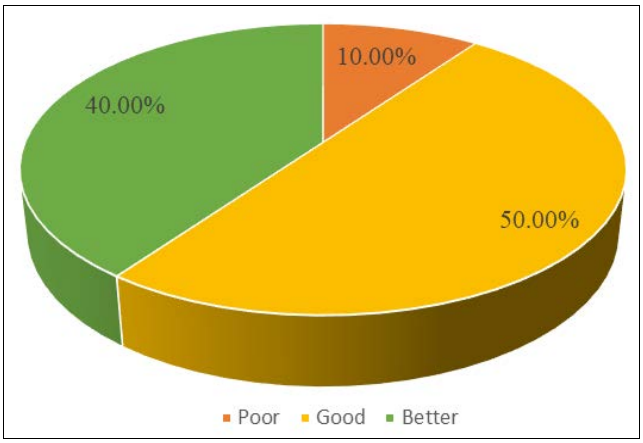

Fig 1: Overall perception of urban non-agricultural practitioners regarding urban agriculture benefits

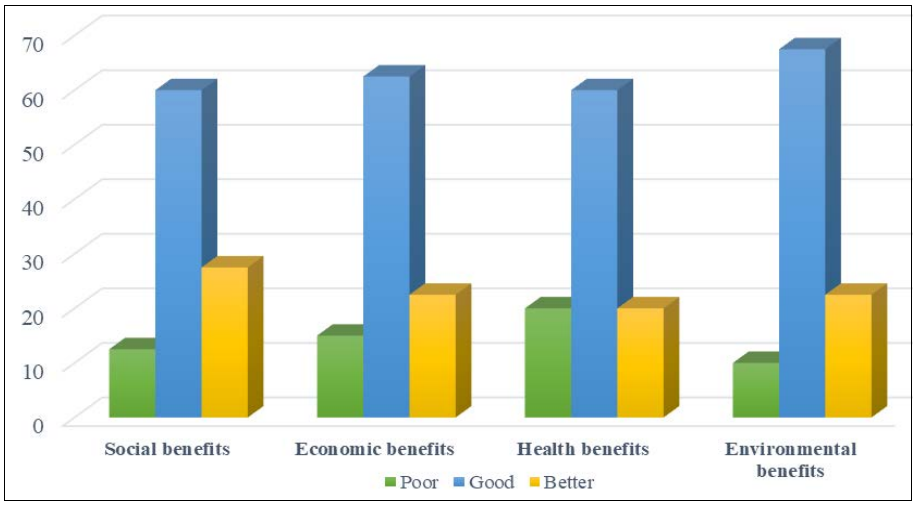

Fig 2: Perception of urban non-agricultural practitioners towards the social, economic, health and environmental benefits of urban agriculture

Conclusion

Based on the results, it is clear that there exists a positive and favorable perception regarding urban agriculture and its benefits among urban residents, even though they are not directly engaged in it. The generally positive perception regarding the overall benefits of urban agriculture indicates that urban non-agricultural residents often observe the activities and successes of their neighborhood farmers,

which can lead to greater recognition of urban agriculture. They may witness improvements in local food availability, aesthetics, and environmental conditions resulting from the farming practices of their fellow farmers. The favorable insights of urban non-agricultural respondents recognize urban agriculture as a critical component of sustainable urban development, which further assists urban planners and policymakers in expanding urban farming initiatives to a greater extent. Holding such a positive perception is advantageous for promoting urban agriculture projects that emphasize community engagement, environmental sustainability, and food security.

References

1. Almeida K, Mateev G, Mendoza N, Polak C. Social cohesion and work opportunities in urban agriculture. Workers, Football, Neighbourhood; c2006. p. 89.
2. AMRUT. Credit Rating Assessment Report of Thiruvananthapuram Municipal Corporation. Bengaluru: Brickwork Ratings; c2017. p. 44.
3. Bailkey M, Wilbers J, van Veenhuizen R. Building communities through urban agriculture (editorial). Urban Agriculture Magazine. 2007;18:1-6.
4. Clucas B, Parker ID, Feldpausch-Parker AM. A systematic review of the relationship between urban agriculture and biodiversity. Urban Ecosyst. 2018;21(4):635-643.
5. Corrigan N. Community gardening, motivation and health benefits. BSc (Human Nutrition and Dietetics) dissertation. University of Dublin, Ireland; c2011. p. 96.
6. Darcel A, Kaur H, Antunes IB, Taylor L, Wong P. Understanding the System of Urban Farming; c2019. p. 1-15.
7. Deelstra T, Girardet H. Urban agriculture and sustainable cities. In: Bakker N, *et al*., eds. Growing cities, growing food. Urban agriculture on the policy agenda; c2000. p. 43-66.
8. Edwards AL. Techniques of attitude scale construction. Bombay: Vikils, Feger and Simons Pvt. Ltd.; c1969.
9. Gallaher CM, WinklerPrins AM, Njenga M, Karanja NK. Creating space: Sack gardening as a livelihood strategy in the Kibera slums of Nairobi, Kenya. J Agric Food Sys Community Dev; c2015. Available: http://erepository.uonbi.ac.ke/handle/11295/85294. [Accessed 23 Aug 2024].
10. Kabisch N, Frantzeskaki N, Pauleit S, Naumann S, Davis M, Artmann M, *et al*. Nature-based solutions to climate change mitigation and adaptation in urban areas: Perspectives on indicators, knowledge gaps, barriers and opportunities for action. Ecol Soc. 2016;21(2):39-55.
11. Khan MM, Akram MT, Janke R, Qadri RWK, Al-Sadi AM, Farooque AA. Urban horticulture for food secure cities through and beyond COVID-19. Sustainability. 2020;12(22):9592. https://doi.org/10.3390/su12229592.
12. Kulak M, Anil G, Julia C. Reducing greenhouse gas emission with urban agriculture: A lifecycle assessment perspective. Landsc Urban Plann. 2013;111:68-78.
13. Lock K, de Zeeuw H. Mitigating the health risks associated with urban and peri-urban agriculture. Urban Agriculture Magazine. 2001;1:6-8.
14. McDougall R, Kristiansen P, Rader R. Small-scale urban agriculture results in high yields but requires judicious management of inputs to achieve sustainability. Proc Natl Acad Sci. 2019;116(1):129-134.
15. Mougeot LJA. Growing Better Cities: Urban Agriculture for Sustainable Development. Ottawa: International Development Research Centre; c2006. p. 1-98.
16. Moustier P, Danso G. Local economic development and marketing of urban produced food. In: van Veenhuizen R, ed. Cities Farming for the Future: Urban Agriculture for Green and Productive Cities. Manila, The Philippines: IIRR/RUAF Foundation/IDRC; c2006. p. 174-195.
17. Omondi SO, Oluoch-Kosura W, Jirström M. The role of urban-based agriculture on food security: Kenyan case studies. Geogr Res. 2017;55(2):231-241.
18. Peters KA. Creating a sustainable urban agriculture revolution. J Envtl L Litig. 2010;25:203.
19. Postek A, Kisic I, Cerjak M, Brezinssak L. Social aspect of urban agriculture with examples from Croatia. J Cent Eur Agric. 2021;22(4):881-891.
20. Poulsen MN, McNab PR, Clayton ML, Neff RA. A systematic review of urban agriculture and food security impacts in low-income countries. Food Policy. 2015;55:131-146.
21. Ramaloo P, Liong CY, Siwar C, Isahak A. Perception of community residents on supporting urban agriculture in Malaysian city: Case study at Bukit Mertajam. Jurnal Pengurusan (UKM Journal of Management). 2018;53.
22. Smit J, Nasr J, Ratta A. Urban agriculture: food, jobs and sustainable cities. New York, USA; c1996. p. 35-37.
23. Stewart R, Korth M, Langer L, Rafferty S, Da Silva NR, van Rooyen C. What are the impacts of urban agriculture programs on food security in low- and middle-income countries? Environ Evid. 2013;2(1):1-13.
24. Thurstone LL, Chave EJ. The analysis of attitude. Chicago: University of Chicago Press; c1929. p. 39-40.
25. Thys E, Schiere H, Van G. Three approaches for the integrated assessment of urban livestock production systems: Cases from sub-Saharan Africa. Outlook Agric. 2006;35:7-18.
26. Viljoen A, Bohn K, Howe J. Continuous Productive Urban Landscapes: Designing Urban Agriculture for Sustainable Cities. Oxford: Architectural Press; c2005.
27. Warren E, Hawkesworth S, Knai C. Investigating the association between urban agriculture and food security, dietary diversity and nutritional status: A systematic literature review. Food Policy. 2015;53:54-66.
28. Wilson A. Growing food locally: Integrating agriculture into the built environment. Environ Building News. 2009;18(2):1-12.