

ISSN Print: 2664-844X
ISSN Online: 2664-8458
NAAS Rating (2026): 4.97
IJAFS 2026; 8(11): 514-517
www.agriculturaljournals.com
Received: 28-08-2026
Accepted: 02-10-2026
Published: 16-11-2026

Makarand Jalindar Ghate
Student M.Sc. (Agriculture), Division of Agricultural Extension Education, Dr. SPCOA, Baramati, Dr. Sharadchandra Pawar College of Agriculture, Baramati, Pune, Maharashtra, India

Gaikwad SP
Assistant Professor, Division of Agricultural Extension Education, Dr. SPCOA, Baramati, Maharashtra, India

Patil PA
Assistant Professor, Division of Agricultural Extension Education, Dr. SPCOA, Baramati, Maharashtra, India

Agale MG
Assistant Professor, Division of Horticulture, Dr. SPCOA, Baramati, Maharashtra, India

Corresponding Author:
Makarand Jalindar Ghate
Student M.Sc. (Agriculture), Division of Agricultural Extension Education, Dr. SPCOA, Baramati, Dr. Sharadchandra Pawar College of Agriculture, Baramati, Pune, Maharashtra, India

Livelihood analysis of sub-urban vegetable growers

Makarand Jalindar Ghate[1], Gaikwad SP[2], Patil PA[3], Agale MG[4]

DOI: https://www.doi.org/10.33545/2664844X.2026.v8.i11g.90993

Abstract
The present study was carried out in Pune district, located in the state of Maharashtra. This district was chosen due to its high levels of urbanization, industrial development and rapid population growth. Haveli tahsil was selected for the study on the basis of level of urbanization. Within Haveli, twelve villages were chosen. From each village, ten vegetable growers were selected using a simple random sampling method, resulting in a total sample size of 120 respondents. An *ex-post facto* research design was used for research. An interview schedule was prepared to gather the required information. The collected data was analyzed using appropriate statistical techniques.
The research study was carried out during the year 2024–25 with the objective of analyzing the livelihood of sub-urban vegetable growers in Haveli tahsil of Pune district. The study indicated that, the majority of sub-urban vegetable growers possessed a medium level of livelihood followed by low and high level of livelihood. These findings suggest that most of the sub-urban vegetable growers maintain a moderate standard of living, with a considerable proportion still facing challenges in achieving higher livelihood outcomes.

Keywords: Sub-urban vegetable growers, livelihood, vegetable farmers, *Ex-post facto* research design, simple random sampling, urbanization

1. Introduction

Pune, a city in Maharashtra, known as the "Oxford of the East," has been undergoing rapid urbanization. Several factors contribute to the city's urban expansion, including high urbanization rates, affordable land prices on the outskirts, unregulated land development, lower taxes and the availability of unused land. (Gaikwad, 2022) [1]. The population of the Pune Metropolitan Region (PMR) expanded from approximately 2.5 million in 1975 to over 9.13 million by 2020 (Schiavina *et al*., 2022) [2]. Between 2001 and 2013, about 52.6 km^2 of green spaces, including grasslands and agricultural lands, were converted into built-up areas (Kantakumar *et al*., 2015) [3]. As rural areas continue to urbanize, urban and sub-urban agriculture is anticipated to play a crucial role in ensuring food security and nutrition. This type of agriculture is expected to be particularly vital in meeting the needs of the approximately 700 million urban residents currently residing in developing countries, especially given the projected urban growth in these regions (Nandini, 2018) [4].
Ellis (2000) [5] stated that, "A livelihood comprises the assets (natural, physical, human, financial and social capital) the activities and the access to these (mediated by institutions and social relations) all that together determine the living gained by the individual or household".A livelihood comprises the capabilities, assets (stores, resources, claims and access) and activities required for a means of living: a livelihood is sustainable which can cope with and recover from stress and shocks, maintain or enhance its capabilities and assets, and provide sustainable livelihood opportunities for the next generation; and which contributes net benefits to other livelihoods at the local and global levels and in the short and long term (Chambers *et al.*, 1992) [6].
Agriculture remains central to India's economy due to its significant role in providing employment and sustenance for many years. As the population grows rapidly, urbanization becomes unavoidable and widespread. Urbanization refers to the redistribution of population and shifts in the demographic balance between rural and urban areas, resulting in the development and expansion of cities. The growth of urban centers brings about substantial changes in investment, employment opportunities and production patterns within the agricultural economy of the surrounding regions (Kavya, 2013) [7]. Hence, it is essential to study the existing livelihood of sub-urban vegetable growers.

2. Methodology

The present study was carried out in the Pune district of Maharashtra. This district was chosen due to its high levels of urbanization, industrial development and rapid population growth (Census of India, 2011) [8]. Haveli tahsil was selected for the study on the basis of level of urbanization. Twelve villages within this tehsil were selected based on their maximum area under vegetable cultivation and production, identified in consultation with the Taluka Agriculture Officer and Agriculture Assistant of that respective area. From each

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village, 10 sub-urban vegetable growers were chosen by simple random sampling method, resulting in a total sample size of 120 respondents. An *ex-post facto* research design was adopted for the study. Data collection was done through personal interviews using a pre-tested interview schedule, with most respondents being approached directly in their fields. The collected data was analyzed using statistical tools such as frequency and percentage.

3. Results and Discussion

It is evident from the Table 1.1 that the majority of sub-urban vegetable growers had a satisfactory level of human capital in terms of access to health care and educational facilities, participation in agricultural training programs and maintaining harmony with neighbouring farmers. However, a considerable proportion of respondents expressed a neutral opinion regarding women's participation in decision-making, leadership roles, agricultural activities, educational pursuits and skill development. Notably, dissatisfaction was observed regarding access to health insurance.

In case of social capital majority of respondents were satisfied with their credibility among fellow villagers, community support during crises, and participation in outreach activities. However, most respondents expressed a neutral opinion regarding membership in social institutions, participation in rural development programmes, serving as resource persons, providing emergency support, and maintaining contact with rural development agencies. Notably, strong dissatisfaction was observed regarding holding positions in socio-political organisations.

In natural capital it was found that majority of respondents expressed dissatisfaction with land holdings and the income-generating potential of livestock. However, satisfaction was observed regarding assured irrigation facilities and access to pollution-free water. Respondents showed a neutral opinion regarding the contribution of fertile land to productivity.

The findings indicated that in case of physical capital the majority of respondents were satisfied with owning comfortable houses, availability of transport facilities, and access to connecting roads between villages and urban areas. However, a considerable proportion expressed a neutral opinion regarding the possession of improved farm equipment and machinery.

In case of financial capital it was found that majority of respondents were strongly dissatisfied with investment in income-generating activities and the supplementary income obtained from animal husbandry. Furthermore, most respondents expressed a neutral opinion regarding the availability of credit, agricultural income, financial assistance from fellow farmers during crises, and annual income.

Table 1. Livelihood of sub-urban vegetable growers.

Sr. No	Statements	SD (1)	D (2)	NDS (3)	S (4)	SS (5)
		Frequency				
A)		**Human capital**				
1	Availed health care facility	0 (00.00)	7 (05.83)	40 (33.33)	52 (43.34)	21 (17.50)
2	Availed educational facility	2 (01.67)	11 (09.17)	42 (35.00)	46 (38.33)	19 (15.83)
3	Perform any leadership role	4 (03.33)	20 (16.67)	48 (40.00)	36 (30.00)	12 (10.00)
4	Involve women in decision making	0 (00.00)	42 (35.00)	51 (42.50)	17 (14.17)	10 (08.33)
5	Encourage women to participate in agricultural activities	2 (01.66)	35 (29.17)	45 (37.50)	27 (22.50)	11 (09.17)
6	Motivate women to pursue education	3 (02.50)	39 (32.50)	49 (40.83)	20 (16.67)	9 (07.50)
7	Attend training on agricultural and allied activities	0 (00.00)	9 (07.50)	45 (37.50)	54 (45.00)	12 (10.00)
8	Skill training on cultivation practices of vegetable crops	6 (05.00)	26 (21.67)	41 (34.17)	37 (30.83)	10 (08.33)
9	Maintain harmony with neighbouring vegetable growing farmers group	5 (04.17)	18 (15.00)	42 (35.00)	43 (35.83)	12 (10.00)
10	Access to health insurance	23 (19.17)	32 (26.67)	27 (22.50)	18 (15.00)	20 (16.66)
B)		**Social capital**				
11	Membership to various social institutions	21 (17.50)	21 (17.50)	37 (30.83)	33 (27.50)	8 (06.67)
12	Holds position in socio-political organisations	46 (38.33)	28 (23.34)	22 (18.33)	15 (12.50)	9 (07.50)
13	Participation in rural development programmes	7 (05.83)	20 (16.67)	52 (43.33)	33 (27.50)	8 (06.67)
14	Credibility among fellow villagers	1 (00.83)	13 (10.84)	39 (32.50)	57 (47.50)	10 (08.33)
15	Getting community support during crisis	0 (00.00)	14 (11.66)	35 (29.17)	60 (50.00)	11 (09.17)

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Sr. No	Statements	SD (1)	D (2)	NDS (3)	S (4)	SS (5)
				Frequency		
16	Participation in outreach activities	4 (03.33)	13 (10.83)	37 (30.83)	58 (48.34)	8 (06.67)
17	Serves as resource person in rural development programmes	7 (05.83)	30 (25.00)	46 (38.34)	30 (25.00)	7 (05.83)
18	Extends support to villagers during emergencies	0 (00.00)	21 (17.50)	47 (39.17)	44 (36.66)	8 (06.67)
19	Extent of contact with the rural development agency	13 (10.83)	24 (20.00)	42 (35.00)	34 (28.34)	7 (05.83)
C)		**Natural capital**				
20	Having land holdings that contribute to enhanced livelihoods	33 (27.50)	54 (45.00)	26 (21.67)	5 (04.16)	2 (01.67)
21	Livestock provides guaranteed income	44 (36.67)	12 (10.00)	25 (20.83)	27 (22.50)	12 (10.00)
22	Assured irrigation facilities for increasing crop productivity	3 (02.50)	5 (04.17)	17 (14.17)	50 (41.66)	45 (37.50)
23	Fertile land enhances land productivity	13 (10.83)	29 (24.17)	48 (40.00)	24 (20.00)	6 (05.00)
24	Access to pollution-free water is essential for a healthy livelihood	1 (00.83)	2 (01.67)	43 (35.83)	47 (39.17)	27 (22.50)
D)		**Physical capital**				
25	Owning a comfortable house	0 (00.00)	5 (04.17)	42 (35.00)	51 (42.50)	22 (18.33)
26	Possession of improved farm equipment and machinery	4 (03.33)	25 (20.83)	60 (50.00)	23 (19.17)	8 (06.67)
27	Availability of transport facilities	0 (00.00)	7 (05.83)	42 (35.00)	60 (50.00)	11 (09.17)
28	Access to connecting roads to the villages and urban areas	0 (00.00)	6 (05.00)	46 (38.33)	64 (53.34)	4 (03.33)
29	Possesses vehicle (bullock cart, car, tractors, truck *etc.*)	1 (00.83)	37 (30.84)	40 (33.33)	30 (25.00)	12 (10.00)
E)		**Financial capital**				
30	Investment in income generating activities	85 (70.83)	2 (01.67)	4 (03.33)	12 (10.00)	17 (14.17)
31	Whether satisfied with availability of credit	2 (01.67)	15 (12.50)	64 (53.33)	30 (25.00)	9 (07.50)
32	Income from agriculture	0 (0.00)	35 (29.17)	49 (40.83)	30 (25.00)	6 (05.00)
33	Practicing animal husbandry provides supple-mentary income	47 (39.17)	2 (01.67)	2 (01.67)	41 (34.16)	28 (23.33)
34	Getting financial assistance from fellow farmers during crisis	1 (00.83)	11 (09.17)	50 (41.67)	40 (33.33)	18 (15.00)
35	Satisfied with annual income	3 (02.50)	31 (25.83)	42 (35.00)	27 (22.50)	17 (14.17)

(SD- Strongly Dissatisfied, D- Dissatisfied, NDS- Neither Dissatisfied or Satisfied, *S*- Satisfied, SS- Strongly Satisfied) (Figures in parenthesis indicate percentage)

Table 2 indicates that the majority (53.33%) of sub-urban vegetable growers had medium level of livelihood. Additionally, 29.17 per cent had low livelihood, while only 17.50 per cent reported a high level of livelihood. Sub-urban vegetable growers had a medium to low level of livelihood, likely due to moderate levels of human, social, natural and physical capital, along with a low level of financial capital.

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Table 2. Distribution of sub-urban vegetable growers according to their livelihood.

Sr. No.	Livelihood (score)	Frequency (n = 120)	Percentage (%)
1	Low (Up to 100.66)	35	29.17
2	Medium (100.67 to 136.33)	64	53.33
3	High (136.34 and above)	21	17.50
	Total	120	100.00

These results are in line with the studies conducted by Gelaneh *et al.* (2014) [9], Bharti *et al.* (2018) [10], Jadhav *et al.* (2019) [11], Kori (2019) [12], Pradhan (2019) [13] and Reddy (2021) [14].

4. Conclusion

The study indicated that, the majority (53.33%) of sub-urban vegetable growers possessed a medium level of livelihood. Additionally, 29.17 per cent of the growers reported a low level of livelihood, while only 17.50 per cent achieved a high level of livelihood. These findings suggest that most sub-urban vegetable growers maintain a moderate standard of living, with a considerable proportion still facing challenges in achieving higher livelihood outcomes. The findings indicate that although vegetable growers had moderate access to basic facilities, social support, natural resources and physical infrastructure, inadequate financial resources, limited investment opportunities, and insufficient supplementary income restricted their overall livelihood status. Therefore, strengthening financial support, improving access to credit, promoting income-generating activities, and enhancing skill development are essential for improving the livelihood of sub-urban vegetable growers.

5. Acknowledgement

The author sincerely expresses gratitude to *Shri Rajendra* Pawar, Hon. Chairman, Agricultural Development Trust, Baramati and the Principal, Associate Dean, Program Coordinator and Head of the Division of Agricultural Extension Education, Dr. SPCOA, Baramati, for providing necessary permission and facilities to conduct this research. The author is deeply thankful to the research guide, co-guide and members of the advisory committee for their valuable guidance, encouragement, and constructive suggestions throughout the study. Special thanks are extended to Dr. P. A. Patil and all teaching and non-teaching staff of Dr. SPCOA, Baramati, for their valuable support and cooperation in completing this research work.

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How to cite this article: Ghate MJ, Gaikwad S, Patil P, Agale M. Livelihood analysis of sub-urban vegetable growers. *International Journal of Agriculture and Food Science*. 2026;8(11):514-517. doi: https://www.doi.org/10.33545/2664844X.2026.v8.i11g.90993

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