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Vegetable Cultivation and Farmers' Socio-Economic Status: Evidence from Mayiladuthurai Taluk

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Abstract
Vegetables are an important component of Indian agriculture and food security because of their short shelf life, higher yield, nutritional richness, economic viability and the ability to create both on-farm and off-farm jobs. India has seen a massive increase in horticultural production in recent years. Agriculture is the dominant occupation in our country. Horticulture crops include large varieties of fruit, vegetables, flowers, plantation and spice crops. India is the second largest producer of fruits and vegetables in the world, after China. Vegetable farming addresses unemployment problems, requires less capital investment and has the added advantage of providing rapid returns. The rapid growth of vegetable businesses requires an effective flow of information to farmers, coupled with the capacity of the country to create a steady flow of business opportunities in the sector, which can only be achieved if its people engage in entrepreneurship. Vegetables are one of the most essential food crops for humans. It has valuable food items that can be used to strengthen and restore the body. Therefore the current study aim to identify the Socio Economic status of Vegetable Cultivators in the Mayiladuthurai Taluk. The economic conditions are closely linked to social structure which is a determinant of the standard of living of the people. The study highlighted that socio economic factors would be necessary for policy makers, development agencies and agricultural stakeholders to promote sustainable and inclusive growth in the vegetable cultivation sector, Providing knowledge on scientific methods and implementing the strategies vegetable cultivators can optimize their operations, enhance yields and achieve sustainable agricultural practices.

Keywords: Vegetable, Agriculture, Cultivation, Production, Income

Introduction

JEL Classifications: Q12, Q13, Q18, I32, O13.

Prelude: Vegetables play a crucial role in Indian agriculture and nutritional security, attributed to their short growth duration, high yield, nutritional value, economic feasibility, and capacity to create both on-farm and off-farm employment opportunities. In recent years, India has experienced a substantial increase in horticultural production. Agriculture remains the primary occupation in our nation. Horticultural crops encompass a wide range of fruits, vegetables, flowers, plantation crops, and spices. Among these, vegetable cultivation is particularly appealing to farmers due to its higher profitability compared to field crops. India holds the second position globally in the production of fruits and vegetables, following China. Vegetable farming addresses unemployment issues, necessitates lower capital investment, and offers quick financial returns. The rapid expansion of the vegetable sector requires an effective flow of information to farmers, and the nation's capacity to create a consistent stream of business opportunities in this field will depend on the entrepreneurial engagement of its populace. Vegetables constitute a vital part of the diet for many individuals, and their production is essential for ensuring adequate intake of various essential vitamins, minerals, and carbohydrates on a daily basis. A noticeable shift in consumption patterns has been observed, marked by a decreasing proportion of food grains and an increasing share of non-food grain items, particularly fruits and vegetables. As a result, vegetable cultivation is poised to take on a more significant role and importance within the agricultural sector and, ultimately, in the national economy. Vegetables are vital components of Indian agriculture and nutritional safety due to their short growth duration, high yield, nutritional richness, economic viability, and their potential to generate both on-farm and off-farm employment.

The cultivation of vegetables represents the most rapidly expanding segment of Indian agriculture. Considering these factors, the current study examines the socio-economic profile of vegetable cultivators in the Mayiladuthurai Taluk. The living standards of individuals are influenced by the social framework. The social structure of the population is closely linked to economic conditions. Therefore, economic and social circumstances are interconnected. In addition to social and economic elements, personal factors such as age, family size, and family type also impact vegetable growers. Vegetable cultivators occupy the lowest tier of the socio-economic hierarchy within Indian society. They constitute the most marginalized group. The standard of living afforded by their earnings is exceedingly low.

Literature

There are number of studies on the area of vegetable cultivation in both micro and macro level such as Baruah and Barman (2000), Jain and Chetan (2002), Johl and Dahiya (2002), Balappa and Hugas (2003), Jain and Tegar (2003), Kumar et al. (2003), Malik and Hooda (2004), Lokesh et al. (2005), Sultan and Waqas (2007), Ghorbani (2008), Chaudhary (2010), Chatterjee (2011), Sangeetha and Banumathy (2011), Joshi (2012), Amlendra Kumar Verma et al (2019), Janaki Rani. A (2020), Jansirani. R & Anjugam. M (2020), Varadhan. R (2020), Gayathri. P et.al (2021), Foumy N Rafeeq & Karthikeyan. C (2021), Bijayalaxmi Nayak & Pradip Kumar Banerjee (2022), Lakshmi. G (2022), Martin. S (2023), Pooshpendra Singh Dixit et al (2023) to mention a few.

Methodology

This research utilizes both primary and secondary data. The Mayiladuthurai district has been intentionally selected as the area of study. In alignment with the objectives, a sample of 60 vegetable cultivators has been chosen through multi-stage random sampling from Mayiladuthurai Taluk. Statistical tools such as percentage analysis and Garrett's ranking technique have been employed to assess the order of problems during data analysis.

Objectives

The current paper aims to analyze the socio-economic status of vegetable cultivators. The objectives include examining the income and expenditure patterns of vegetable cultivators, exploring the challenges they encounter, and suggesting potential measures to enhance the conditions of vegetable cultivators.

Analysis

Table 1: Socio Economic Status and Conditions of Vegetable Cultivators

S.N0		Number of Respondent	%	S.N0		Number of Respondent	%
1.Age				**8.Nature of House**			
1.	Below 30	6	10	1.	Thatched	12	20
2.	31- 40	26	43	2.	Tiled	9	15
3.	**41-** 50	20	33	3.	Terraced	7	12
4.	51 Above	8	13	4.	Colony	32	53
	Total	**60**	**100**		**Total**	**60**	**100**
2.Marital Status				**9.Religion Status**			
1.	Married	58	96	1.	Hindu	56	93
2.	Un-Married	2	**4**	2.	Christian	0	0
3.	Widow/ Widower	0	0	3.	Muslim	4	7
	Total	**60**	**100**		**Total**	**60**	**100**
3.Educational Status				**10. Land Holdings**			
1.	Illiterate	8	13	1.	Less than 1 Acre	28	46
2.	School Education	6	10	2.	1Acres - 2 Acres	18	30
3.	Graduate	42	70	3.	2Acres - 3 Acres	4	7
4.	Post Graduate	4	7	4.	Above 3 Acres	10	17
	Total	**60**	**100**		**Total**	**60**	**100**
4. Family Size				**11.Asset Possession**			
1.	Below 3	12	20	1.	Movable	16	26
2.	3 - 6	38	64	2.	Immovable	11	18
3.	Above 6	10	16	3.	Both Movable, Immovable	33	56
	Total	**60**	**100**		**Total**	**60**	**100**
5.Weekly Income				**12. Savings**			
1.	Below Rs. 5,000	26	43	1.	Below Rs.3,000	40	67
2.	Rs 5,000 - Rs 6,000	18	30	2.	Rs.3,000-Rs.4,000	9	15
3.	Rs 7,000 - Rs 8,000	6	10	3.	Rs.4,000-Rs.5,000	6	10
4.	Above Rs. 9,000	10	17	4.	Above Rs. 5,000	5	3
	Total	**60**	**100**		**Total**	**60**	**100**
6.Source of Borrowings				**13. Cost of Cultivation (One Acre)**			
1.	Money Lender	28	47	1.	Land Preparation	800	
2.	Neighbours	7	11	2.	Seed	600	
3.	Loan Received from Some Government Organization	15	25	3.	Farm Yard Manure	500	
4.	land Owning	10	17	4.	Fertilizers	1000	

	Community						
				5.	Pesticides	500	
	Total	**60**	**100**		**Total**	**3400**	

7. Types of Vegetables

	Vegetables	Yield (kg)	Average Income
1.	Brinjal	400	6000
2.	Ladies Finger	200	5000
3.	Cluster Beans	750	2500
4.	Gourd	500	30,000
5.	Green Chilly	300	15000
6.	Tomato	600	10,000

14.Problems faced by the Vegetable Cultivators

1.	Irrigation	IV
2.	Poor quality of Seeds	III
3.	Menace of insects and Diseases	I
4.	Lack of Market Information	VII
5.	Change in Climatic Conditions	II
6.	Middleman Exploitation	VI
7.	Reduction of Price	V

Source: Primary Data

Major Observations

1. Among the respondents aged 31-40 years, 43% are significantly involved in vegetable farming, followed by 33% of those in the 41-50 ages. Additionally, 13% belong to the age group of 51 years and older, while the remaining 10% are under 30 years of age.
2. The data reveals that out of 60 sampled respondents, a significant majority of 58 (96%) are married, while 2 (4%) are unmarried. The remaining respondents, classified as Widow/Widower, are not engaged in cultivation within the study area.
3. Regarding educational qualifications, the majority of the sample respondents, 42 (70%), hold a Graduate degree, followed by 8 (13%) who are Illiterate. Furthermore, 6 (10%) have completed their School Education, and the remaining 4 (7%) fall under the Post Graduate category.
4. The findings indicate that the largest group, 38 (64%) of the sample respondents, have a family size of 3-6 members, followed by 12 (20%) with a family size of fewer than 3 members. Those with a family size exceeding 6 members constitute 10 (16%) of the sample respondents in the study area.
5. It is observed that in terms of income distribution, only 10% of respondents earn above Rs. 9,000 weekly, while 43% belong to the income group earning below Rs. 5,000. Additionally, 18% fall within the income range of Rs. 5,000 to Rs. 6,000, and 10% earn between Rs. 7,000 and Rs. 8,000 weekly. This income distribution significantly influences consumption and savings levels.
6. The analysis indicates that a majority of 28 (47%) of the respondents have borrowed money from money lenders, followed by 15 (25%) who obtained loans from state government organizations. Furthermore, 10 (17%) borrowed from land-owning communities, while the remaining 7 (11%) borrowed from neighbors. This trend highlights the prevalent economic challenges faced by the respondents.
7. The major cultivation of vegetables in the study area enlist in Brinjal, Ladies Finger, Cluster Beans, Gourd, Green Chilly and Tomato. It is observed from the above table the yield of per acre in different types of Vegetables, the average yield of Brinjal is 400 Kg, Green Chilly yield is 300 Kg. The highest yield is Cluster Beans is 750 Kg and Lowest yield is Ladies Finger. The yield of Tomato per acre is 600 Kg.
8. It is clearly understood that house conditions of the sample respondents majority of respondents are lived in colony houses 32 (53%) followed by 12 (20%) of the respondents lived in thatched houses. 9 (15%) of the respondents lived in tiled houses and remaining 7 (12%) of the respondents lived in terraced houses.
9. Regarding religion 56 (93%) are Hindu and followed by 4(7%) respondents are Muslims and Christians are not cultivated vegetables in the study area.
10. It shows the land holdings of vegetable cultivators in the study area. It has been seen that 46 percent of the cultivators have less than 1 acre, 30 percent of land holders are have 1 acre to 2 acres and followed by 17 percent of cultivators have above than 3 acres of land holding. Only 7 percent of land holders have 2to 3 acres respectively.
11. Regarding the assets Possession of the respondents, the majority 33(56%) of the respondents possess both movable and immovable assets followed by 16 (26%) of the respondents where only movable assets and remaining 11 (18%) of the respondents have immovable assets only.
12. The average monthly savings of the sample respondents. Out of the 60 respondents, majority of the respondents (67%) saved money Below Rs. 3,000, followed by (15%) of respondents saved money Rs, 3,000 to Rs.4,000. 10 percent of sample respondents saved money Rs.4,000 to Rs.5,000 and Above Rs. 5,000 (3%) of respondents are saved money.
13. In terms of the inputs utilized by vegetable cultivators, land preparation costs amount to Rs. 800, followed by seed expenses of approximately Rs. 600. Next on the list is the expenditure on Farm Yard Manure, which is estimated at Rs. 500, and subsequently, Fertilizers and Pesticides account for Rs. 1000 and Rs. 500, respectively.
14. The data clearly illustrates the challenges encountered by farmers during the cultivation of vegetables. The threat posed by insects and diseases is the most significant issue, followed by changes in climatic conditions, poor seed quality, irrigation, price reductions, exploitation by middlemen, and a lack of market information. The irrigation problem is closely linked to seed quality, as inferior seeds result in lower productivity, earning it the third rank. The issue of insufficient market information is ranked last.

Recommendations

1. The government ought to support vegetable farmers in forming cooperative societies that can supply various inputs at fair prices, including saplings, seeds, fertilizers, and pesticides at subsidized rates, as well as provide marketing assistance to the farmers.

2. It is essential for the farmers to receive training in contemporary vegetable cultivation techniques to achieve greater productivity.
3. The Department of Horticulture should develop strategies and supply innovative tools to enhance labor efficiency, thereby reducing production costs.
4. A significant challenge impacting vegetable production and productivity is the high frequency of insect and pest infestations, along with the widespread occurrence of diseases. The Department of Horticulture should proactively offer necessary facilities, guidance, and information to farmers to safeguard their crops from these threats.
5. Organic farming is another recommended approach to boost income per hectare from vegetable cultivation, as there is a growing global demand for organic products.
6. Such initiatives would create new opportunities for farmers. Both Central and State Governments should provide adequate incentives to farmers within their respective development plans. This support is crucial, considering that vegetable farming is labor-intensive and workers must be compensated with increasing wages to improve their living standards.
7. The production costs of vegetables are consistently rising across nearly all regions of the district. A reduction in production costs can only be achieved through enhanced productivity levels.
8. The introduction of new high-yielding, disease-resistant varieties would significantly contribute to increasing vegetable productivity. Farmers should be willing to offer wages that exceed those of industrial workers and builders to minimize labor turnover.
9. Development agencies currently in operation must undergo technical modernization by creating a network of technology centers and establishing a technical division within the Department of Agriculture. This division should maintain a continuous and evolving relationship with 249 universities, colleges, and research and development organizations both in India and internationally.
10. The awareness of growers regarding the initiatives of the Horticulture Department concerning vegetable cultivation has empowered small growers to comprehend the quality of seeds, the application of fertilizers, and pesticides, among other factors. This level of awareness has been shown to significantly impact their overall satisfaction.
11. Timely financial support, particularly in the form of agricultural lending options, should be made accessible to vegetable growers to motivate them to engage in effective cultivation practices.
12. Reports indicate that distress sales of vegetables by growers are widespread. Growers often sell their produce well before the harvesting season at prices significantly lower than market rates to alleviate their financial burdens with money lenders and commission agents.
13. The Government of India must formulate policies aimed at enhancing local markets to benefit growers. This includes establishing robust, accountable, and transparent regulatory bodies within this sector to provide marketing information and oversee competition throughout the supply chain.
14. Providing technical assistance, improving access to credit and inputs, and investing in infrastructure and storage facilities are essential for enabling growers to achieve a sustainable livelihood and compete effectively with others.

Conclusion

Vegetables represent the most crucial element of horticultural crops. It is vital for policymakers, development agencies, and agricultural stakeholders to comprehend and tackle the socio-economic factors that influence the sector, thereby fostering sustainable and inclusive growth in vegetable cultivation. This approach aims to enhance the livelihoods of growers and alleviate poverty. Disseminating knowledge regarding scientific cultivation methods is necessary to lower costs, improve credit management, ensure quality, and establish connections with a dependable market intelligence system. By adopting these strategies, vegetable producers can optimize their operations, boost yields, and contribute to sustainable agricultural practices. Collectively, these efforts will enhance vegetable production and productivity, ultimately leading to the overall prosperity of the nation.

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