Original Research Article

A Study on Socio-economic Status of Tomato Growers in Solan District of Himachal Pradesh

ABSTRACT

Tomato is one of the most consumed and produced horticulture crops in the world. It is more economical than food grains due to their higher production per unit area in less time as they provide a good source of income to farmers. The present study has been conducted to study the socio-economic status of tomato growers in the Solan district of Himachal Pradesh. The multi-stage sampling technique and pre tested interview schedule were used for data collection for the study. A sample was collected from eight villages in Solan district to make a total sample size of 80 tomato growers in the study area for the agricultural year 2021-2022. Mean, percentage, frequency, and standard deviation were used to find out the socio-economic status of tomato growers. The result revealed that majority (80%)per cent(Use uniformity in all) of tomato growers belonged to middle aged group and 33.75 per cent had primary school education. About 76.25 per cent of tomato growers had joint family with 3 to 7 family members. 77.5 per cent of tomato growers had 0.5 to 3.17 bigha under tomato cultivation with 11 to 42 years of farming experience. The gross income of tomato growers was Rs. 60,000 per bigha and net income was Rs. 38,353 per bigha. The output input ratio worked out to be 1.77. The majority of tomato growers (55%) had medium level of socio-economic class.

Keywords: Gross income, Net income, Production, Socio-economic status, Tomato growers.

1 INTRODUCTION

Tomato (*SolanumLycopersicum)* plays an important role by providing economic and nutritional security to producers. It is one of the most important cash crops ranked second after potato. It is one of the most consumed and cultivated solanaceous plant species. Tomato belongs to the nightshade family, Solanaceae with other crops like eggplants, tobacco, potato, chilies, etc. Today whole world uses tomatoes as king ingredients in their dish. Tomato is the most popular vegetable in the world with an annual production of approximately 180 million tonnes on a global scale. India is a resource-rich country where agriculture and its allied sectors provide the majority of people's income. Agriculture employs more than 70% of India's total workforce. Agriculture is vital to the country's economy. The agricultural sector contributed 20.2 percent(per cent) in 2020-21. The total geographical area of the country is 328.7 million hectares, with a net sown area of 139.5 million hectares. The gross cropped area is 197.05 million hectares, with a net irrigated area of 68.65 million hectares (Land Use Statistics, 2018). In Himachal Pradesh, total area under vegetable, cultivation was 88.61 thousand hectares with a total production of 1776.02 thousand tons during 2019-20 (NHB, 2019-20). In Himachal Pradesh among different vegetables like cabbage, garlic, capsicum, carrot, and chilies, tomato is one of the most commercially grown vegetables mainly in district Solan. Tomato growers require sufficient access to affordable yield-enhancing inputs and modern methods in order to boost their production, profitability, and sustainability. Access to appropriate education, health care, and other resources is determined by an individual's or group's social standing and economic situation. There are several studies on Indian farmers, but the socioeconomic status of our tomato growers is

only mentioned in a few study journals, despite the fact that farmers in the Solan district have been farming tomatoes for many years. Very less information about their socio-economic status is known. Understanding how these study's findings will serve contribute immense importance for future references and will also help researchers acquire insight into the socioeconomic status of tomato growers in the coming days.

In this study, an attempt had been made to understand the ground reality of tomato growers' social and economic status which will further help the policymakers to decide on suitable policies and strategies, for the well-being of the tomato growers. The finding of the study will also contribute to design appropriate extension programmes to boost tomato growers in the study area and other areas with similar situation. With this as a background, the present study was conducted to understand the various effect of social and economic factors on tomato production in the Solan district of Himachal Pradesh.

2. METHODOLOGY

Description of the Study Area/Universe

Himachal Pradesh is a hilly state in northern India. It is the 16th largest state in India covering a total geographical area of 55,673 sq km. The total population in the state is 68.5 lakh with a population density of 123 people per sq. km. The literacy rate of the state is 82.8 per cent. There are twelve districts in Himachal Pradesh which includes Bilaspur, Chamba, Hamirpur, Kangra, Kinnaur, Kullu, Lahaul and Spiti, Mandi, Shimla, Sirmaur, Solan and Una. There are three divisions namely Kangra, Mandi and Shimla and 73 sub-divisions in the state

The present study was carried out in the Solan district of Himachal Pradesh. Among all the twelve districts of Himachal Pradesh, the leading district in the area under tomato cultivation is Solan district. The total area under tomato cultivation in Himachal Pradesh was 11,064 hectares out of which Solan has 4,640 hectares. Besides the Solan district also has the highest tomato production out of all other districts in the state.

Sampling and Sampling Procedure

2.1 Selection of the district

Out of twelve districts of Himachal Pradesh state,Solan district was selected purposively for the present study as it has the highest area (4,640 ha) and production (2,32,000 tonne) of tomato compared to other districts

2.2 Selection of block

District Solan is comprised of five blocks viz, Nalagarh, Kunihar, Solan, Dharampur, and Kandaghat. Further, out of five blocks, Solan and Dharampur blocks were selected purposively on the basis of maximum production among all blocks.

2.3Selection of villages

From the two selected blocks i.e. Solan and Dharampur, the further selection of the villages was done randomly using a simple random sampling method. A list of villages was collected from the block and from the list of villages four villages were selected randomly from each selected block without replacement (SRSWOR) i.e. Simple random sampling without replacement was used for the present study. The villages were selected using Random Number Generator.

2.4 Selection of farmers/respondents

From each selected villages, ten tomato growers were selected randomly to make the total sample of 80 tomato growers. The multi-stage sampling technique was used for the study.

2.5 Statistical Data Analysis

For the study, data were collected in accordance with the study's predetermined objectives, which had been coded or scored, classified, and tabulated using appropriate statistical tools, such as IBM Statistical Packages for Social Sciences (SPSS) version 20, to make inferences pertaining to the research study and draw conclusions, it was calculated using formula as mean, percentage, frequency, and standard deviation. The respondents were categorized in three categories using the Singh cube root method and also based on mean and standard deviation.

Cost concepts

In this study, the cost of cultivation included was classified as recommended by the "Special expert committee on cost estimates, GOI, New Delhi." The cost concepts considered in this study are as follow:

Cost A_1: It includes

1. Values of hired/owned human labour
2. Value of seed
3. Value of manure and fertilizer
4. Value of insecticides and pesticides and chemical fertilizers
5. Value of bullock and machinery labour
6. Depreciation on implements and farm buildings
7. Land revenue
8. Interest on working capital

CostA_2: CostA_1+Rentpaidfor leasedinland

Cost B_1: Cost A_2 + Interest on value of owned fixed capital assets (Excluding land)

Cost B_2: Cost B_1 + Rental value of owned land (net land revenue) + rent paid for leased in land

Cost C_1: Cost B_1 + Imputed value of family labour

Cost C_2: Cost B_2 + Imputed value of family labour

Cost C_3: Cost C_2 + 10 % of C_2 (managerial cost)

Gross Income: Yield of main product (in Qtl) x their price (in Rs)

Net Income: Gross income – Cost of cultivation

Farm Business Income: Gross Income – Cost A_2

Farm Labour Income: Gross Income -Cost B_2

3. RESULTS AND DISCUSSION

The socio-economic characteristics of tomato growers included age, education, family type, family size, occupation, farming experience, social participation, farm power and implements, land holding of tomato growers. Communication characteristics included extension contact, mass media exposure, and information-seeking behavior along with the area under tomato cultivation, cost and returns of tomato growers are discussed under the following headings:

3.1 (S)socio-economicfactorsoftomatogrowers

The result shows different parameter of social and economic profile of tomato growers in the study area. Table 1 shows that majority (80%) of tomato growers were middle aged (34 to 56 years) while 10 per cent of respondents were young and 10 per cent belonged to old aged category. The possible reason could be that they had primary level of education and in order to sustain a livelihood they were engaged in farming which was passed on to them from their forefather. According to data, 3.75 per cent of respondents were illiterate, 13.75 had middle education, 25 per cent had secondary level of education, 7.5 per cent had completed diploma, 10 per cent graduate and 5 per cent completed post graduation and majority of respondents i.e.,33.75 per cent had completed primary level of education as majority of respondents in the research area were middle aged who could not afford private schools back then and were mostly dependent on government educational institutes located far from the village.

In case of family size, majority (90%) of tomato growers had medium family size with three to seven family members. This is because in the study area majority had joint family type followed by nuclear family type. The fact that only 20 per cent of tomato growers were purely dependent on agriculture and the majority (80%) of tomato growers have diversified their sources of income to expand their livelihood options to support their livelihood as risk and uncertainties are associated in the farm sector. Table 1 disclosed that majority of tomato growers had medium i.e., 11 to 42 years of experience in cultivation of tomato in the study area. They had been helping their parents and started working in tomato's fields. Majority of respondents had no social participation because that about 80 per cent of tomato growers were occupied in other source of income alongside farming.

The majority had medium level of farm power and machinery due to farmers' small land holdings, which limit their capacity to invest. In terms of landholding majority (81.25%) had 1-5 bigha land followed by 11.25 per cent with six to ten bigha 3.75 per cent with eleven to fifteen bigha and 3.75 per cent with sixteen to twenty bigha. This indicates that majority of respondents were small and marginal farmers. Table 1 clearly elucidates that maximum 77.50 per cent of tomato growers has one to three bigha under tomato cultivation followed by 20 per cent of tomato growers with three to six bighaand 2.5 per cent of tomato growers had six to ten bigha area for tomato cultivation.This is due to the division of land with each generation as it goes from parent to children.

Table 1 shows the communication characteristics of tomato growers. It is revealed that majority (56.25%) of tomato growers had medium level of extensioncontact followed by low level (30%) highlevel (13.75%)ofextensioncontacts.Table 1 delineate that 48.75 per cent respondents had mediumlevel of mass media exposure and 33.75 per cent respondents had low level of massmediaexposure.17.50per centhadhighlevelofmassmediaexposureinthestudyarea. Reason might be due to theirmediumlevel of education, extension contacts and economic conditions. It is inferred from the table that majority (42.50%) of tomato growers

hadmediumlevelofinformationseekingbehaviorfollowed by high level (38.75%) and low level (18.75%) ofinformationseekingbehavior. Thepossiblereasonforgatheringmoreinformation could be to make decision on farm related activities that help them growmore crops.

Table 1. Socio-economic factors of tomato growers

Socio-economic factors	Frequency	Percentages (%)
Age of tomato growers (years)		
Less than 34	08	10.00
34 to 56	64	80.00
More than 56	08	10.00
Education		
Illiterate	03	3.75
Primary	27	33.75
Middle Education	11	13.75
High school	20	25.00
Diploma	06	7.50
Graduate	08	10.00
Post Graduate	04	5.00
Family Type		
Single	18	22.50
Nuclear	01	1.25
Joint	61	76.25
Family Size (in numbers)		
Below 3	03	3.75
3-7	72	90.00
Above 7	05	6.25
Occupation		
Farming (Tomato production)	16	20.00
Farming + Laborer	08	10.00
Farming +Shopkeeper	30	37.50
Farming + Driver	09	11.25
Farming + Business	01	1.25
Farming + Service	16	20.00
Farming Experience (in years)		
Below 11	12	15.00
11-42	67	83.75
Above 42	01	1.25
Social Participation		
No participation	77	96.25
Member of one organization	03	3.75
Farm power and implements		
1-9	20	25.00
9-17	47	58.75
17-26	13	16.25
Land Holding (bigha)		
1- 5	65	81.25
6-10	09	11.25
11-15	03	3.75
16-20	03	3.75
Area under tomato cultivation (bigha)		
1-3	62	77.50
3-6	16	20.00
6-10	02	2.50

Extension contacts		
Low	24	30.00
Medium	45	56.25
High	11	13.75
Mass Media Exposure		
Low	27	33.75
Medium	39	48.75
High	14	17.50
Information Seeking Behavior		
Low	15	18.75
Medium	34	42.50
High	31	38.75

**1 bigha is equal to 0.2 acre*

3.2 Costandreturnsanalysisof tomato growers in the study area per bigha

The cost and returns from production of tomato crop per bighais presentedin Table 2. It delineates that per bigha cost A_1, cost A_2, cost B_1, cost B_2, cost C_1, cost C_2,andcost$C_3$of tomatogrowerswasRs.12,992.46,Rs.12,992.46,Rs.13,006.58,Rs.14879.08, Rs. 17,806.58, Rs. 19,679.08 andRs.21,646.99, respectively.The cost ofproduction per bigha and yield per bigha was Rs. 21,646 per bigha and 30 quintalsrespectively. The gross income of tomato growers came to Rs. 60,000 and net incomewas observed to Rs. 38,353 per bigha. The output input ratio was worked out to be 1.77thatmeansthecultivationoftomatowas profitableinthestudyarea.

Table 2. Cost and returns analysis of tomato growers in the study area per bigha

	Particulars	**Values (Write Unit)**
Cost	Human hired labour	4,600
	Seed/plants	1,500
	FYMcost	1,500
	Fertilizer cost	1,537
	Machinerylabour	1,000
	Plant protection	2,600
	Interestonworking capital	114.21
	Depreciation	110
	LandRevenue	31.25
	Sub-Total	**12,992.46**
$CostA_2$	$CostA_1$	12,992.46
	Rentalvalueofleasedinland	0
	Sub-Total	**12,992.46**
$CostB_1$	$CostA_1$	12,992.46
	Interest ofownedfixedcapital	14.12
	Sub-Total	**13,006.58**
$CostB_2$	Cost B_1	13,006.58
	Rentalvalueofland	1,872.5
	Rentalvalueofleasedinland	0
	Sub-Total	**14,879.08**
$CostC_1$	$CostB_1$	13,006.58
	Imputedvalueoffamily labour	4,800
	Sub-Total	**17,806.58**
$CostC_2$	Cost B_2	14,879.08
	Imputedvalueoffamilylabour	4,800
	Sub-Total	**19,679.08**
$CostC_3$	Cost C_2	19,679.08

Valueofmanagementinput(10%ofcost C_2)	1,967.90
Sub-Total	**21,646.99**
CostA_1CostB_2	12,992.46
Cost C_3	14,879.08
Yield(Qtl.)	21,646.99
Grossincome(Rs.)	30
Farmbusinessincome(Rs.)	60,000
Farmlabourincome(Rs.)	47,007.53
	45,120.91

1 bigha is equal to 0.2 acre

4. CONCLUSION (CONCLUSIONS)

Theinferenceregardingsocioeconomicandcommunication characteristic of tomato growers clearly depicts that tomatogrowersarequiteawareabouttheprogramme and training benefitsbutlacka deepunderstanding which is linked with their living standard.Therefore, other mass mediasourceshouldbeutilizedtoprovidemoreinformation. The government should appoint more extension personnel to interact with the targetgroups to understand their needs and problems in order to fulfil the purpose of thedevelopmentprogramme. To educate tomato growers about enhanced crop production, extensionagentsmustvisitvillagesandeducatethemaboutenhancedtomatoproduction.

There is a need to encourage and support farming professionals by diversifying theagricultural practices as farming was main occupation only for somepercentage of tomato growers. They had already switched over to the non-farm sector todiversifytheirsourceofincome.Therefore, a welfare program for small and marginalfarmershouldbeimplementedintruespiritinallblocks.

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