



## **Constraints Perceived by Vegetable Growers for the use of Farm Mechanization**

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### **Abstract**

Emergence and application of farm mechanization helped in achieving the optimum crop production and reducing the human drudgery to an extent. Often farm mechanization is mistakenly perceived as tractor mechanization. Even though farm mechanization helps farmers in various ways it is not adopted on a full scale. Hence the study was conducted to find the constraints perceived by the farmers especially in vegetable cultivation. The study has been conducted in twelve villages of Vansda taluk of Navsari district of Gujarat which was purposively selected. Sixty respondents were randomly selected from the vegetable cluster units working in the area. A pre-structured questionnaire schedule was prepared for collecting data with regard to the constraints perceived by the farmers. Frequency for each constraint was given in descending order and based on that ranking order was given. From the investigation, it concludes that majority of the respondents were middle aged, had primary level of education and agriculture and livestock as their chief occupation. Majority of the respondents were marginal farmers and had an experience of above 25 years in agriculture and allied activities. Among the constraints, application of machines in heavy soil was troublesome ranked first ranked since Gujarat is a state having black soil, farmers found very difficult to operate the farm machines. Lack of credit facility, high variable cost and lack of technical support ranked third, fourth and fifth, respectively.



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### **Introduction**

Gujarat is having tropical climate, with temperature ranging from 13°C to 27°C in January and a maximum of 45°C in May-June. The normal annual rainfall of

Gujarat state is 852 mm and has about 1600km long coastal area. This climatic pattern favours for development of fresh fruits like Alphonso mango, Sapota, Aonla and Dates, vegetables like Bitter gourd,

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Onion and Beans, the spices like Cumin, Fennel and Garlic. Grapes, Cashew, Medical and Aromatic crops like Aloe vera, Palmarosa are emerging as potential new crops in suitable areas of the state. Investment of Green House, floriculture and medical plant projects, tissue culture units, fruit and vegetable processing units are initiated in the state, which shows shining future of horticulture in the Gujarat. Farmers get ample options in crop diversification as well as in setting up of agro based industries.

Small and marginal farmers were encouraged for the sustainable and viable horticulture production through various technological interventions and policy refinements. Farm mechanization is widely adopted in the cultivation of field crop cultivation, vegetable cultivation, plantation etc. different type of farmer and eco friendly implements have been developed and its being used from land preparation to post harvesting process. During the green revolution the importance of farm mechanization gained its

**Table 1: Distribution of respondents according to Socio-economic characteristics**

Sr. No	Personal Characteristics	No. of respondents	Percentage (%)
1	<b>Age</b>		
	Young age (Up to 32 years)	15	25
	Middle age (between 33 to 52 years)	33	55
	Old age (above 52 years)	12	20
2	<b>Education</b>		
	Illiterate	8	13.3
	Primary level of education	30	50
	Secondary and higher secondary level of education	16	26.6
	College level of education and above	6	10
3	<b>Occupation</b>		
	Agriculture + allied activities	19	31.66
	Agriculture+ livestock	34	56.66
	Agriculture + allied activities + business	7	11.68
4	<b>Land Holding</b>		
	Marginal farmer	28	46.66
	Small farmer	16	26.66
	Medium farmer	12	20
	Big farmer	4	6.66
5	<b>Annual Income</b>		
	Up to Rs. 50,000	18	30
	Rs. 50,001- Rs. 1,00,000	32	50.33
	Rs. 1,00,001- Rs. 1,50,001	10	16.67
	Rs 1, 50,001- to Rs. 2,00,000	-	-
	Above Rs. 2,00,001	-	-
6	<b>Size of family</b>		
	Small size of family (up to 6 members)	26	43.33
	Medium size of family (6 to 8 members)	23	36.67
	Large size of family (more than 8 members)	12	20
7	<b>Farming experience</b>		
	Lower level of farming experience	10	16.67
	Medium level of farming	12	20
	Higher level of farming	38	63.33
8	<b>Farming Experience in Mechanization</b>		
	Lower level of farming experience in mechanization	21	35
	Medium level of farming experience in mechanization	25	41.67
	Higher level of farming experience in mechanization	14	23.33

importance. The technological interventions paved the way for higher adoption of vegetable cultivation and reducing the drudgery of the farmer. Still full scale adoption of farm mechanization in farmsteads is lacking. This might be due to various reasons like difference in socio-economic characteristics and topographical variations of a place. The non-availability and high wages of casual labour were the important problems faced by the farmers and mechanization was associated with high cost and non-availability of machinery<sup>6</sup>.

Constraints faced by the vegetable growers differ from individual to individual depending upon their social status, communication behaviour, livelihood requirement<sup>3</sup>. Out of the major problems, farmers were lacking technical knowledge especially in mechanization of agriculture, soil testing programme and integrated pest management. Considering these factors, it is worthy to conduct an investigation based on the "constraints perceived by vegetable growers in the application of farm mechanization" was conducted. The present study was done with the following objectives:

1. To identify the socio-economic characteristics of vegetable growers in the study area.
2. Analyze constraints faced by the vegetable growers in the application of farm mechanization.

The study was conducted among vegetable growers of the Vansda taluka of Navsari district of Gujarat. Twelve villages were purposively selected and a comprehensive list of the farmers who adopted farm mechanization in their vegetable cultivation area

was obtained from vegetable cluster unit working in Limzar. The 60 respondents were randomly selected from the villages of Vansda taluka of Navsari district. Ex-post facto design was used in the research. Most suitable variables were selected for studying the socio-economic characteristics of the farmers. A pre-structured questionnaire schedule was prepared for collecting data with regard to the constraints perceived by the farmers. Frequency for each constraint was given in descending order and based on that ranking order was given.

## Results And Discussion

### Socio-Economic Characteristics Of Vegetable Growers

From table 1, it indicates that majority (55%) of the respondents were in the middle age group. The respondents belonging to young and old age group were 25 and 20 per cent, respectively. It also stated that young age group was interested to adopt farm mechanization in vegetable cultivation, which may be due to better returns within the short period. These findings are supported with the other studies<sup>1,2,4,5</sup>. Among the respondents, 50 per cent of the respondents were found to have primary level education and very few (10 %) respondents had college level of education and above level of education. The respondents from secondary and higher secondary level of education and illiterate level of education were 26.6 and 13.3 per cent, respectively. Majority of the farmers were belonged to agriculture and allied activities (56.66 %) and 31.66 per cent of the respondent were from agriculture and livestock background. Respondents doing all the three occupations (agriculture, allied activities and business) were only 11.68 per cent, which was

**Table 2 : Distribution of respondents according to their constraints experienced during farm mechanization**

(n=60)			
Sr.No	Constraints	Percentage	Rank
1.	Lack of technical support	48	V
2.	Lack of technical knowledge and skill	59	II
3.	Lack of credit facility	56	III
4.	High variable cost	52	IV
5.	Application of machines in heavy soil is troublesome	68	I
6.	Undulated topography	45	VI

very low. Regarding land holding, 46.66 per cent of the respondents were belonged to the category of marginal farmer, 26.66 percent of the respondents belonged to the category of small farmer, 20 and 6.66 per cent of the respondents belonged to the category of medium and large farmer.

More than half of the respondents (53.33 %) were having annual income of Rs. 50,000–1,00,001 and 30 per cent of the respondents were having annual income up to 50,000, while 16.67 per cent of the respondents were having annual income of Rs. 1,00,001–1,50,000. From the table 1, it indicates that slightly less than half (43.33%) of the respondents were from small size of family, slightly less than the one third (36.66 %) of the respondents had medium size of family and 20 per cent of the respondents had large size of family. With regard to farming experience, 55 per cent of the respondents were having higher farming experience (above 15 years), 20 per cent of the respondents were having medium level of farming experience and 16.67 per cent were from lower level farming experience.

In mechanization experience, 41.67 per cent of the respondents were having medium level of farming experience followed by 35.00 per cent of the respondents had lower level and 23.33 per cent were from higher level of farming experience in mechanization.

#### **Constraints Perceived By Vegetable Growers In Relation To The Farm Mechanization.**

The difficulties faced by the vegetable growers in their day to day farm activities are accounted as the constraints. To obtain the better result of any adoption of technology constraints must be minimized. Therefore, constraints must be studied thoroughly and remedies must be made regarding the same. The information regarding the constraints was collected according to the respondent's perception and frequency for each constraint was given in descending order.

Among the constraints listed out in the Table 2, which was according to the perception of farmer, application of machines in heavy soil was troublesome ranked first followed by lack of technical knowledge and skill

ranked second. Since Gujarat is a state having black soil, farmers found very difficult to operate the farm machines. Lack of credit facility, high variable cost and lack of technical support ranked third, fourth and fifth, respectively. Other major constraint experienced by the vegetable growers was undulated topography of the location due to this transportation of heavy machines was difficult.

#### **Conclusion**

This study conducted was mainly intended to know the socio-economic status of the respondents as well as the problems faced by the farmers in farming activities with respect to mechanization. It concludes that the majority of the respondents were middle aged, had primary level of education and agriculture and livestock as their chief occupation. Majority of the respondents were marginal farmers and had an experience of above 25 years in agriculture and allied activities. Farm mechanization has been adopted in the vegetable cultivation. But farmers found very difficult to operate the farm machines and the major constraint faced by the farmers was the lack of technical knowledge and skill.

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