

Socio-economic Impact of Technologies Developed by Agricultural Universities on Farmers with Respect to Major Crops

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Abstract

The present investigation was conducted in Ratnagiri district of Konkan region with the objective to assess the socio-economic impact of recommended technologies of mango developed by DBSKKV, Dapoli on farmers and to study the adoption with constraints and suggestions. Total 100 mango growers were interviewed with special designed schedule. More than half of the respondents had 'high' adoption of recommended practices, followed by 45.00% of the respondents who had 'medium' adoption of recommended practices of mango. At overall level more than half (56.00%) of the respondents reported 'medium' impact of technologies, while 30.00% and 14.00% respondents had 'low' and 'high' impact of technologies, respectively. Significant socio-economic impact was observed in the parameters like housing pattern, monthly thrift habit, annual spending pattern, change in yield and income, change in assets and change in social participation after adoption of recommended mango technology generated by DBSKKV, Dapoli by the farmers. 'Lack of technical support as and when needed regarding recommended practices of mango' (69.00%), 'non availability of skilled labour' (65.00%), 'costly insecticides and pesticides' (64.00%), 'costly fertilizers' (52.00%) were the constraints faced by the farmers in adoption of mango technologies. The suggestions 'inputs should be made available on subsidized rate in time through co-operatives or panchayat institutions' (62.00%) and 'need based training programme be organized by the University' (59.00%) were offered by mango growers. It is recommended that success stories showing the impact of recommended mango technologies on the farmers should be published by University to motivate the other farmers as well as to provide timely information on improved mango technology, effective extension education programmes

like cluster demonstrations, information through ICT tools, audio-visual aids be implemented by the University and Department of Agriculture.

Keywords: Socio-economic, impact, technologies Agricultural University.

Introduction

Dr. Balasaheb Sawant Konkan Krishi Vidyapeeth, Dapoli was established in May 1972 with a view to conduct the need based, location specific research in the field of agriculture, fisheries and veterinary science.

Konkan region of Maharashtra is predominated by major crops like mango and rice. Keeping this in view, it was thought to analyze the spread of improved technology of mango, so as to know where we are and where we ought to go in the present new economic environment. Data regarding impact of technology on mango growers are very scanty. Thus the present investigation entitled 'socio-economic impact of technologies developed by Agricultural Universities on farmers with respect to major crops' was undertaken with the following objectives.

1. To study the adoption of recommended technologies of mango developed by DBSKKV, Dapoli.
2. To assess the socio-economic impact of recommended technologies of mango developed by DBSKKV, Dapoli on farmers.
3. To understand the constraints faced by the farmers in adoption of recommended technologies of mango.
4. To seek the suggestions of the farmers to overcome the constraints in adoption of recommended technologies of mango.

Materials and Method

The study was conducted in Ratnagiri district of Konkan region because this district is having maximum area

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under mango crop. Two tahsils namely Rajapur and Ratnagiri having highest area under mango from among all tahsils were purposively selected. From these two tahsils, five villages were selected randomly and from each selected village ten mango growers were selected. Thus the sample consists of 100 mango growers. Practicing mango growers having at least 15 to 20 years old trees on at least 1 acre area were considered for selection as respondent. The data were collected from respondents by personal interview schedule. The data collected were analyzed and tabulated suitably.

Results and Discussion

Adoption of recommended technologies of mango developed by DBSKKV, Dapoli by the farmers

Adoption level of the respondents was studied for recommended technologies of mango crop. The observations on adoption of recommended technologies are presented and discussed hereunder.

Overall adoption

The results of the present investigation in respect of overall adoption level of recommended technologies are presented in Table 1.

It can be seen from Table 1 that 52.00% of the respondents had 'high' adoption of recommended practices, followed by 45.00% of the respondents who had 'medium' adoption of recommended practices of mango. Only 3.00% of the respondents had 'low' adoption. The average adoption index was 60.72.

Adoption of recommended technologies of mango

The adoption of recommended technologies of mango under various categories is presented in the Table 2.

Majority of the mango growers adopted the recommended practices namely 'improved mango varieties' (97.00%),

Table 1. Adoption of recommended technologies of mango developed by DBSKKV, Dapoli by the farmers

Sl. No.	Adoption group	Respondents % (N=100)
1.	Low (up to 33.33)	3
2.	Medium (33.34 to 66.66)	45
3.	High (66.67 and above)	52
Average (Index): 60.72		100

'plant population' (70.00%), 'organic fertilizer' (32.00%), 'chemical fertilizer' (68.00%), 'plant protection' (78.00%), 'mechanization' (63.00%) and 'harvesting technology' (72.00%) to the fullest extent.

The partial adoption was observed in the recommended practices namely 'organic fertilizer' (54.00%), 'chemical fertilizer' (32.00%), 'plant population' (30.00%), 'plant protection' (20.00%). Recommended technologies under the category fruit processing remained unadopted by most of the respondents (65.00%).

Socio-economic impact of recommended technologies

Impact of technology was assessed in terms of change in expenditure on education, change in social participation, change in annual spending pattern, change in income from selected crop, change in house, change in employment status, change in occupation, change in assets, change in monthly thrift habit, change in area, change in land utilization pattern and change in yield. The overall impact of technology was also assessed by summing up score of all parameters. Comparison between pre- and post-adoption situation was done for assessing the impact of technologies.

Socio-economic impact on selected parameters

The information regarding socio-economic impact after adoption of recommended technologies developed by Dr. BSKKV, Dapoli are presented in Table 3.

Table 2. Major practice wise adoption of recommended technologies of mango

Sl. No.	Practices	Adoption % (N=100)		
		Full	Partial	No
1.	Improved mango varieties	97	3	-
2.	Plant population	70	30	-
3.	Organic fertilizer	32	54	14
4.	Chemical fertilizer	68	32	-
5.	Plant protection	78	20	2
6.	Mechanization (Tools, sprayers, implements etc.)	63	12	25
7.	Harvesting	72	22	06
8.	Fruit processing	23	12	65

Table 3. Socio-economic impact of recommended technologies on selected parameters.

Sl. No.	Impact parameter	Respondents % (N=100)		
1.	Change in expenditure on education		7.	Change in occupation
	No change (0)	23		No change (0)
	Low (up to 33.33)	22		Low (up to 33.33)
	Medium (33.34 to 66.66)	44		Medium (33.34 to 66.66)
	High (66.67 and above)	11		High (66.67 and above)
	Average (Index): 36.29	100		Average (Index): 41.29
2.	Change in social participation		8.	Change in assets
	No change (0)	23		No change (0)
	Low (up to 33.33)	09		Low (up to 33.33)
	Medium (33.34 to 66.66)	60		Medium (33.34 to 66.66)
	High (66.67 and above)	08		High (66.67 and above)
	Average (Index): 42.18	100		Average (Index): 44.12
3.	Change in annual spending pattern		9.	Change in monthly thrift habit
	No change (0)	-		No change (0)
	Low (up to 33.33)	7		Low (up to 33.33)
	Medium (33.34 to 66.66)	80		Medium (33.34 to 66.66)
	High (66.67 and above)	13		High (66.67 and above)
	Average (Index): 54.52	100		Average (Index): 56.72
4.	Change in income from selected crop		10.	Change in area
	No change (0)	-		No change (0)
	Low (up to 33.33)	27		Low (up to 33.33)
	Medium (33.34 to 66.66)	63		Medium (33.34 to 66.66)
	High (66.67 and above)	10		High (66.67 and above)
	Average (Index): 45.21	100		Average (Index): 28.80
5.	Change in house / housing pattern		11.	Change in land utilization pattern
	No change (0)	3		No change (0)
	Low (up to 33.33)	4		Low (up to 33.33)
	Medium (33.34 to 66.66)	62		Medium (33.34 to 66.66)
	High (66.67 and above)	31		High (66.67 and above)
	Average (Index): 60.08	100		Average (Index): 28.80
6.	Change in employment status		12.	Change in yield
	No change (0)	24		No change (0)
	Low (up to 33.33)	10		Low (up to 33.33)
	Medium (33.34 to 66.66)	55		Medium (33.34 to 66.66)
	High (66.67 and above)	11		High (66.67 and above)
	Average (Index): 37.34	100		Average (Index): 45.24

It is seen from Table 3 that 44.00% of the respondents had reported change in their expenditure on education at 'medium' level, while 23.00% had 'no change' in their expenditure on education due to adoption of mango technology. Majority (60.00%) respondents reported change in their social participation at 'medium' level, while 23.00% reported 'no change' in their social participation after adoption of the technologies. Regarding annual spending pattern, large number of (80.00%) respondents stated that their annual spending pattern was at 'medium level' due to adoption of technologies. More than two fifth (63.00%) respondents reported 'medium' change in income from selected crop and 27.00% reported 'low' change in income from selected crop. More than three fifth (62.00%) of the respondents had reported 'medium' change in their housing pattern and 31.00% stated 'high' change in housing pattern. More than half (55.00%) of the respondents had 'medium' change in employment status while 24.00% respondents reported 'no change' in employment status. Almost equal number of the respondents stated 'low' and 'high' change in their employment status. More than half (59.00%) of the respondents reported 'medium' change in occupation, while 24.00% respondents stated 'no change' in occupation.

More than three fifth (69.00%) of the respondents had 'medium' change in their assets while 23.00% respondents opined 'low' change in assets. More than half (57.00%) of the respondents made 'medium' change in their monthly thrift habit and 32.00% stated 'high' change in their monthly thrift habit.

More than two fifth (42.00%) of the respondents reported 'no change' in area, whereas 36.00% and 15.00% respondents reported 'medium' and 'low' change in area, respectively.

More than two fifth (42.00%) of the respondents reported 'no change' in their land utilization pattern. More than half (53.00%) of the respondents reported 'medium' change in their yield and 35.00% respondents stated 'low' change in yield.

Overall impact of recommended technologies

As stated in the beginning the interpretation of impact of technology on mango growers was assessed by making sum total of the change occurred on above parameters. The results thus obtained are depicted in Table 4.

At overall level more than half (56.00%) of the respondents reported 'medium' impact of technologies, while 30.00% and 14.00% respondents had 'low' and

'high' impact of technologies, respectively. The average impact index was 46.04.

Constraints faced by the farmers in adoption of recommended technologies

The constraints faced by the farmers in adoption of recommended technologies in mango are presented in Table 5.

It is seen from Table 5 that 'lack of technical support as and when needed regarding recommended practices of mango' (69.00%), 'non availability of skilled labour' (65.00%), 'costly insecticides and pesticides' (64.00%), 'costly fertilizers' (52.00%), 'high wage rates of labour' (47.00%) and 'changes in climatic conditions' (47.00%) were the constraints faced by the farmers.

Table 4. Overall impact of recommended technologies

Sl. No.	Overall impact category	Respondents % (N=100)
1.	Low (up to 33.33)	30
2.	Medium (33.34 to 66.66)	56
3.	High (66.67 and above)	14
Average (Index) : 46.04		100

Table 5. Constraints faced by the farmers in adoption the recommended technologies

Sl. No.	Constraints	Respondents % (N=100)
1.	Lack of technical support as and when needed regarding recommended practices of mango	69
2.	Non of availability of skilled labour	65
3.	Costly insecticides and pesticides	64
4.	Costly fertilizers.	52
5.	High wage rates of labour	47
6.	Changes in climatic conditions	47

Suggestions of the farmers to overcome the constraints in adoption of recommended technologies

The suggestions of the farmers to overcome the constraints in adoption of recommended technologies are presented in Table 6.

The suggestions obtained from the farmers to overcome the constraints in adoption of recommended practices were 'inputs should be made available on subsidized rate in time through co-operatives or panchayat institutions' (62.00%), 'need-based training programme be organized by the University' (59.00%), and 'timely guidance to cope up with the changing climatic conditions' be provided (49.00%).

Conclusion

Present study has brought out that significant socio-economic impact was observed in the parameters like housing pattern, monthly thrift habit, annual spending pattern, change in yield and income, change in assets and change in social participation after adoption of recommended mango technology generated by DBSKKV, Dapoli by the farmers. In order to solve the farmers' problems, the extension agencies may undertake

Table 6. Suggestions of the farmers to overcome the constraints in adoption of recommended technologies

Sl. No.	Constraints	Respondents % (N=100)
1.	Inputs should be made available on subsidized rate in time through co-operatives or panchayat institutions	62
2.	Need based training programme be organized by the University	59
3.	Timely guidance to cope up with the changing climatic conditions	49

the programmes so as to provide timely technical guidance to the mango growers as and when needed. The University may undertake research and extension programme to provide timely guidance to the mango growers to cope with the changing climatic conditions.

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