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Influence of farmers' club programme in Manipur: an empirical study on degree of farmer's satisfaction

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ABSTRACT

Farmers' Club plays key role in rural transformation through transfer of technology and creating linkages with technical institution and credit agencies. The present study examines the satisfaction level of the farmers on the activities conducted in the selected four Farmers Club viz. Sangaithel Farmers' Club, Khabam Bamdiar Farmers' Club, Khumbong Farmers' Club and Heikrujam Farmers' Club of Manipur. A total of 13 parameters covering various aspects of demonstration and activities conducted were taken to examine the level of satisfaction perceived by the respondent farmers. Cronbach's Alpha value was used to examine consistency of the coefficients of the parameters for examining degree of satisfaction. The study revealed that farmers experience different level of satisfaction on various parameters. Higher satisfaction was reported with regard to increasing cropping intensity, reducing cost of cultivation, ease in marketing of farm produce, selection of quality seeds and judicious use of fertilizer. Contrary to this, farmers face hardship and challenges with respect to access to crop insurance scheme and pheromone trap as part of their farming activities.

1. Introduction

Agriculture is the backbone of the Indian economy with more than 50 per cent of the total workforce dependent on agriculture and allied activities. 70 percent of rural households depend primarily on agriculture for their livelihood, with 82 percent of farmers being small and marginal. During the year 2018-19, agriculture and allied sector contributed 15.87 % of the Gross value added at current prices. With production of agriculture activity valued $375.61 billion, India is second largest producer of agriculture product in the world. India is expected to achieve the ambitious goal of doubling farm income by 2022 and various efforts and initiatives have been taken up for doubling of farmer income. One of initiative is the adoption of improved technologies for increasing production as well as reducing cost of cultivation. For dissemination and adoption of new technology various training, awareness and demonstration programme are required. Extension personals have a key role to play in transfer of technology from research station to the end users i.e. the farmers. To bring reasonable changes in the rural areas, location specific need based training highlighting the local problems and issues are important. Poor resource base and lack of finance especially for small and marginal farmers pose a big challenge for the adoption of improved

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technology. In this regard, the role and intervention of Farmers' Club (FC) is very important. FC is a grass root level informal forums organised by rural branches of banks with the support and financial assistance of National Bank for Agricultural and Rural Development (NABARD). FC is promoted by SAUs, ICAR and KVKs for giving technical and knowledge support to the member farmers. Group saving and joint account in banks by the members of FC, linkage with SAUs, ICAR and KVKs and taking up an economically viable agricultural activity increase their credibility leading to increase access to farm loan especially in the form of Kisan Credit card. Group credit therefore, potentially reaches more farmers than individual credit. Elias *et al.*, 2015 in their study also reported that agricultural research institutions like ICAR and extension system like KVKs have extent their maximum supports to the farmers by giving solutions to their problems, thereby increasing their farm incomes.

The satisfaction of farmers towards the various extension services got positive responses only when they get fair pricing, security of crops, payment on time, guidance from employees, security from malpractices and proper weighing system (Paridhi and Mishra, 2014). Adoption of latest post-harvest handling technology, value addition, etc. made the farmers enjoy the benefits of collective bargaining power both for procuring inputs and selling off their produce (NABARD, 2013). The evaluation of farmers' satisfaction is an important index for measuring the effectiveness of extension activities and intervention conducted through the FC. The study of satisfaction on intervention on improved varieties, subsidy policy by the peasant households is of great significance (Zhuang, 2015). A critical analysis and examination of the satisfaction level of the various interventions conducted through FC is very important for making change in the approach and making future extension strategies. In this regard, the present study has been taken up to examine the degree of farmer's satisfaction of intervention taken up by extension functionaries in Manipur.

2. Materials and Methods

Sampling Procedure

The present work is an empirical study on the degree of farmer's satisfaction towards the various intervention conducted through Farmers' Club approaches in Manipur. For the present study, Imphal Club in the state. Four farmers' club viz. Sangaithel Farmers' Club of Sangaithel village, Khabam West district of Manipur has been selected purposively as it has the highest number of Farmers' Bamdiar Farmers' Club of Khabam Bamdiar village, Khumbong Farmers'

Reliability of the Measurement Items for Internal Consistency

A profound list of relevant variables with their measurement items was developed based on literature review and discussion among the scientist and experts in the field. This list included items reflecting degree of satisfaction of training and demonstration conducted through farmers' club, perceived relevance of improved technology and package of practices, extension contact and services provided, location specific extension program and improving crop production and income. To elicit responses on frequency and extent, the face validity of the selected items was ensured from reliability analysis during pre-testing and after data collection. Cronbach's Alpha value was calculated and compared with the range to examine consistent with the recommended value of greater than or equal to 0.7 (Henseler *et al.,* 2009; Hair *et al.,* 2012), indicating their validity and reliability. The formula for Cronbach's Alpha is as follows:

$$\hat{\alpha}_{=}\frac{k}{k-1}\left[1-\frac{\sum_{i=1}^{k}p_i(\ 1-p_i)}{\sigma_x^2}\right]$$

k is the number of items taken up for study; p_i refer to the proportion of examinees who answered item i correctly; and σ_x^2 is the sample variance for the total score. Cronbach's Alpha value ranges from 0 to 1.00, with values close to 1.00 indicating high consistency. Professionally developed high-stakes standardized tests should have internal consistency coefficients of at least 0.90. Lower-stakes standardized tests should have internal consistencies of at least 0.70 or higher (Wells and Wollack, 2003). Cronbach's Alpha value of more than 0.7 is regarded as reliable and a valid one (Henseler *et al.,* 2009; Hair *et al.,* 2012).

Empirical Approach

The core variable in this study corresponds to farmers' satisfaction with agricultural extension related service provided by the four farmer's club to their respective members. In order to examine the satisfaction level of the farmers on various training, demonstration, expert's interaction and other intervention given through farmers' club programme, a total of 13 parameters were taken. The parameters considered comprises of use of paddy drum seeder machine, pheromone trap, cono-weeder, organic pest management practices, judicious use of fertilizers, quality seed selection technique, accessibility of crop insurance schemes,

contact with expert for pest and disease management, access to Kisan Credit Card (KCC), access to soil testing and soil health card (SHC), ease in marketing of farm produce, increase in cropping intensity and reducing cost of cultivation. For the convenient of the analysis five themes has been set and each theme has been sub-divided in different components. To examine the degree of farmers' satisfaction, the respondents were asked to make a remark on the selected statements. The response choices with ordinal meaning arranged sequentially comprises of strongly satisfied, satisfied, normal, dissatisfied and strongly dissatisfied, respectively. Each statement is again grouped into three sub-categories viz. dissatisfied, normal and satisfied by merging closely similar satisfaction levels.

3. Results and Discussion

The socio- economic characteristics of the respondents is considered as a tool for measuring the basic background and wellbeing of the household. In the study, characteristics such as age, education, annual household, cropping system and family size has been studied and is given in table 1 below.

It was found that maximum of the respondent ie 60 per cent belong to the age group of 30 to 55 years, followed by age group of more than 55 years constituting 24 per cent and the remaining 16 per cent in the age group which is less than 30 years. It shows that middle age people tend to be more proactive in becoming member of Farmers' Club. Examination of the education level of the respondent revealed that all the farmers were literate. Maximum of the farmers have completed high school comprising 32 per cent followed by middle school standard (26 per cent) while 7 per cent were graduate. This shows that members farmers have good education level which help in adoption of new technology and better decision making ability. Maximum of the household have a family size of 1 to 4 followed by household with 5 to 6 members constituting 41 per cent while remaining 16 household have family size 7 and above.

The income earning of respondent household revealed that majority of the respondents (69 per cent) have average income less than Rs.40,000 per annum, while 29 per cent of the household have income in the range between Rs. 40,000 to 1 lakh and only 2 per cent have income above 1 lakh respectively. Land holding profile of the respondent revealed that marginal farmers with less than 1 ha area constitute 88 per cent, small farmers with land holding 1 to 2 ha constitute the remaining 12 per cent. Further, it was found that 70 per cent of the farmers were practising monoculture with paddy as the sole crop and no cultivation in rabi and summer season. The remaining farmers comprising of only 30 per cent were practicing double cropping by cultivating crops rabi and summer crops

Reliability of the Measurement Items

Reliability measurement of the 13 selected parameters was analysed using Cronbach's Alpha value the result of which is shown in table 2. For the present study Cronbach's Alpha value was found to be 0.710 which shows that reliability coefficient is high and the score on that test can be used to draw conclusions about farmer's degree of satisfaction towards the various approaches and intervention conducted by the Farmers' Club.

Farmers Overall Satisfaction with Farmer Club programme and intervention

The various parameters taken up for examining the level of farmer's satisfaction level are grouped into the following sub-theme as satisfaction level on Transfer of Technology, Satisfaction Level on Sustainability of Farm Production, Satisfaction Level on Extension Service and Level of Satisfaction on Marketing of Farmer Produce. The detail of the analysis of satisfaction level are discussed below.

Satisfaction Level on Transfer of Technology

The results of the empirical analyses on the levels of satisfaction and dissatisfaction of the respondents towards transfer of technology related activities of farmers' club are given in table 3. The study revealed that the highest percentage of farmer's satisfaction was on the use of cono-weeder with 84 per cent respondent satisfaction followed by use of paddy drum seeder machine with 58 per cent satisfaction and use of pheromone trap with 54 per cent satisfaction. On the other hand, the dissatisfaction level was the least for cono-weeder (3 per cent) and highest for pheromone trap (18 per cent). The use of pheromone trap was new to most of the farmers and they did not have previous ideas and knowledge of it because of which the satisfaction level was low and farmers need more training and demonstration of it. Paddy is a labour intensive crop and more than 50% of the expenses is incurred on labour comprising of both the human and machine labour (Singh K R, 2018). Mechanization help to reduce increase work efficiency, save time and reduce labour cost. In this regard, the farmers are highly interested in the use of small tools and equipment which are being demonstrated and popularised through Farmers' Club in Manipur.

Satisfaction Level on the Sustainability of Farm Production

The result of the analysis of satisfaction level on the sustainability of farm production is given in table 4. The study revealed that the highest satisfaction was on judicious use of fertilizer and quality seed selection techniques with 95 per cent of the responded satisfied with the training and

intervention given through Farmers' club. Organic pest management practices have a satisfaction level of 75 per cent and accessibility of crop insurance schemes recorded the least satisfaction with only 19 per cent. There are some tradition organic pest management practices which are followed by the farmers but management practices for field crops like paddy are lacking in practice. The training and demonstration given on organic pest management practices through Farmers club programme are of great help to the farmers. Poor accessibility of crop insurance scheme is a problem of the farmers, some of the factors responsible are non-availability of land records, small size of farm holding, tenancy and poor yield at farms level. Poor access to crop insurance was also reported in the study by Raju and Chand, 2008. Increase in crop yield through use of quality seeds by involvement in training and awareness programmes was also reported by Haque *et al.*, 2012.

Satisfaction Level on the Extension Service

The analysis on satisfaction level on extension services revealed that the highest satisfaction was on contact with experts for pest and disease management (91 per cent satisfaction) followed by access to Kisan credit card (87 per cent satisfaction) and the least on access to soil testing and soil health card with satisfaction level of 70 per cent respondents. Frequent contact and communication of members of Farmers' club with experts and extension functionaries at field and during training help to solve the problems of farmers in the study area. Access to Kisan Credit Card (KCC) has been made possible by assistance of bank especially co-operative bank and Regional Rural bank especially for members of Farmers' club through the Farmers' club credit linkage programme.

Level of Satisfaction on cropping and Marketing of Farmer Produce

The study on cropping and marketing of farmer produce revealed that farmers were satisfied on training and awareness programme for increase in cropping intensity scoring 100 per cent. The satisfaction level on ease in marketing of farm produce and cost of cultivation recorded 94 per cent each. For ease in marketing of farm produce remaining 6 per cent respondent were having normal satisfaction level. In case of reducing cost of cultivation 2 per cent farmers were in normal satisfaction level and remaining 4 per cent express dissatisfaction. With mono-cropping farm income is very less and resource utilization is sub-optimal. Training and awareness programme on suitable crops that can be grown in rabi and summer season and their cultivation practices were conducted at the village level. Availability of planting material, soil and water management practices, monitoring and field visit, access to Kisan Credit card and availability of marketing facilities are important factors for increase in cropping intensity.

4. Conclusion

The finding shows that the services provided through Farmers' club are reliable, high quality and satisfactory. Farmers generally were pleased with management methods and providing of appropriate technology with the present approach. The needs and demands of the farmers varies from region to region and place to place and research institutes like ICAR and extension system like KVKs play key role in fulfilling the location specific needs and demand of farmers for development of agriculture. Organized form of training and demonstration through informal group like Farmers clubs have been found to be an effective approach for bringing changes at grassroots level. Despite high satisfaction level of member farmers in Farmers club programme there is still room for the expansions in order to accelerate the degree of satisfaction level of the farmers. To bring long lasting sustainable improvement in farming, we need to look into the areas where farmer's express dissatisfaction especially access to crop insurance and other facilities. To bring a holistic change and development in farming, an isolated approach to the problem will not be effective, instead convergence of the different stockholders like line department, banks, NABARD, input dealers, R&D institution and extension machinery are very important.

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Table 1. Socio- economic characteristic of the respondents

S. No.	Characteristics	Frequency and percentage	Mean ± SD
1.	*Age category*		
	Less 30	16	25.38 ± 3.23
	30-55	60	41.5 ± 6.52
	More 55	24	62.08 ± 4.26
2.	*Education qualification*		
	Primary	10	
	Middle school	26	
	High school	32	
	Intermediate level	14	
	Graduate	7	
3.	*Family Size*		
	1 to 4	43	3.72 ± 0.55
	5 to 6	41	5.44 ± 0.50
	7 to 10	15	7.73 ± 1.16
	More than 10	1	12
4.	*Annual household income*		
	<40000	69	23353.78 ± 5185.37
	40000 to 100000	29	66053 ± 9480.35
	>100000	2	192200 ± 81741.54
5.	*Types of farmer*		
	Marginal (<1 ha)	88	0.48 ± 0.75
	Small farmer (1-2 ha)	12	1.12 ± 0.67
6.	*Cropping system*		
	Mono cropping	70	
	Double	30	

Table 2. Reliability of the Measurement Items

Reliability Statistics	
Cronbach's Alpha	N of Items
.710	13

Table 3. Satisfaction level on Transfer of Technology

S. No.	*Raw Overall Satisfaction level*	*Raw Score*	*Aggregated Score*	
		Frequency	Percentage	Category
1.	**Use of paddy drum seeder machine**			
	Strongly Dissatisfied	0	11	Dissatisfied
	Dissatisfied	11		
	Normal	31	31	Normal
	Satisfied	27	58	Satisfied
	Strongly Satisfied	31		
2.	**Use of pheromone trap**			
	Strongly Dissatisfied	0	18	Dissatisfied
	Dissatisfied	18		
	Normal	28	28	Normal
	Satisfied	16	54	Satisfied
	Strongly Satisfied	38		
3.	**Use of Cono-weeder**			
	Strongly Dissatisfied	0	3	Dissatisfied
	Dissatisfied	3		
	Normal	14	14	Normal
	Satisfied	41	83	Satisfied
	Strongly Satisfied	42		

Table 4. Satisfaction level on the sustainability of farm production

S. No.	*Raw Overall Satisfaction level*	*Raw Score*	*Aggregated Score*	
		Frequency	Percentage	Category
1.	**Use of organic pest management practices**			
	Strongly Dissatisfied	0	16	Dissatisfied
	Dissatisfied	16		
	Normal	9	9	Normal
	Satisfied	28	75	Satisfied
	Strongly Satisfied	47		
2.	**Judicious use of fertilizer**			
	Strongly Dissatisfied	0	0	Dissatisfied
	Dissatisfied	0		
	Normal	5	5	Normal
	Satisfied	36	95	Satisfied
	Strongly Satisfied	59		
3.	**Quality seed selection technique**			
	Strongly Dissatisfied	0	4	Dissatisfied
	Dissatisfied	4		
	Normal	1	1	Normal
	Satisfied	32	95	Satisfied
	Strongly Satisfied	63		

S. No.	Raw Overall Satisfaction level	Raw Score	Aggregated Score	
		Frequency	Percentage	Category
4.	Accessibility of crop insurance schemes			
	Strongly Dissatisfied	31	77	Dissatisfied
	Dissatisfied	46		
	Normal	4	4	Normal
	Satisfied	12	19	Satisfied
	Strongly Satisfied	7		

Table 5. Satisfaction level on the extension service

S. No.	Raw Overall Satisfaction level	Raw Score	Aggregated score	
		Frequency	Percentage	Category
1.	Contact with expert for pest and disease management			
	Strongly Dissatisfied	0	0	Dissatisfied
	Dissatisfied	0		
	Normal	9	9	Normal
	Satisfied	21	91	Satisfied
	Strongly Satisfied	70		
2.	Access to Kisan Credit Card (KCC)			
	Strongly Dissatisfied	0	12	Dissatisfied
	Dissatisfied	12		
	Normal	1	1	Normal
	Satisfied	14	87	Satisfied
	Strongly Satisfied	73		
3.	Access to Soil Testing/Soil Health Card (SHC)			
	Strongly Dissatisfied	0	16	Dissatisfied
	Dissatisfied	16		
	Normal	14	14	Normal
	Satisfied	16	70	Satisfied
	Strongly Satisfied	54		

Table 6. Level of Satisfaction on cropping and marketing of Farmer produce

S. No.	Raw Overall Satisfaction level	Raw Score	Aggregated score	
		Frequency	Percentage	Category
1.	Ease in marketing of farm produce			
	Strongly Dissatisfied	0	0	Dissatisfied
	Dissatisfied	0		
	Normal	6	6	Normal
	Satisfied	52	94	Satisfied
	Strongly Satisfied	42		
2.	Increase in cropping intensity			
	Strongly Dissatisfied	0	0	Dissatisfied
	Dissatisfied	0		

S. No.	*Raw Overall Satisfaction level*	*Raw Score*	*Aggregated score*	
		Frequency	Percentage	Category
	Normal	0	0	Normal
	Satisfied	46	100	Satisfied
	Strongly Satisfied	54		
3.	**Reducing cost of cultivation**			
	Strongly Dissatisfied	0	4	Dissatisfied
	Dissatisfied	4		
	Normal	2	2	Normal
	Satisfied	51	94	Satisfied
	Strongly Satisfied	43		