

Effectiveness of Farmers' Groups Organized under Agricultural Technology Management Agency (ATMA) in Jorhat, Assam

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ABSTRACT

The present investigation was conducted in Jorhat district of Assam with a view to study the effectiveness of the farmers' groups organized under Agricultural Technology Management Agency (ATMA). All the three sub-divisions of Jorhat district were selected for the study. A total of 168 respondents were selected from 24 nos. of farmers' groups selected randomly. Both purposive and random sampling techniques were used in the present study. Data was collected by administering structured schedule. Relevant statistical techniques were used to analyze the data. The results of the study indicated that majority (95.83%) of the farmers' groups organized under ATMA were effective followed by 4.17 percent less effective in overall sample. Not a single group was found to be highly effective in all the three sub-divisions. The group effectiveness was calculated with the help of effectiveness index and farmers' opinion about the farmers' groups that he belongs was collected with the help of a ladder scale having ten (10) point continuums. A positive and significant relationship was found between the effectiveness index score and the ladder score obtained by a group. Major problems faced by the respondents were non-availability of different irrigation facilities, lack of special market for organic produce, lack of need based training, lack of electricity, unavailability of organic manures and high cost of pump sets and other equipments required for irrigation.

Key words: Farmers' groups; Effectiveness index, Problems;

Agriculture accounts for more than one third of Assam's income and employs 69 percent of total workforce. In view of the farmer's problems, available resources, the integration of farming system approach, involvement of extension personnel and farmers in the research and extension system etc. a gap has been observed between the recommended package of practices and adoption of those at farmer's level. To achieve this, the State Government has adopted the "Agricultural Technology Management Agency" (ATMA model) developed by MANAGE, Hyderabad for refinement and effective transfer of farm technology to the farming community on the same pattern as it was pilot tested under the "Innovation in Technology Dissemination" (ITD) component of "National Agricultural Technology Project" (NATP) (*DADS of Jorhat, 2005*).

Assam, the gate way to North East, covers a total geographical area of 78,438 Sq. Km. spreading over 27 districts with a population of 31,169,272

(*Census, 2011*). Assam's agriculture has yet to experience modernization in a real sense and is lagging behind. During the last two decades the scenario in rural areas has significantly changed which is having a major bearing on the existing farming systems for livelihood security. Though the economy of Assam is based on agriculture, but still the agriculture of Assam has remained largely underdeveloped due to certain factors like natural calamities, soil erosion, primitive methods and implementation, political interference, inadequate irrigation facilities, marketing problems and many more. *Padala (2011)* revealed that the main reason for becoming a group member is to get eligibility for availing government schemes and for availing bank loan facility. The study also proved that though majority of the members are illiterates their savings performance, group loan, and bank loan repayment performance are satisfactory. *Swai (2007)* revealed that low income is the main problem among the members of farmers' group. *Kumar et al. (2009)* found that the farmers'

clubs constituted by KVK are engaged in distributing Kishan Credit Cards, arrangement of quality seed / planting material, improved implements, input supply and marketing of farm produce at remunerative price. The members of these farmers’ clubs are working on cooperative basis and making farming a promising enterprise. Majority of farm people are small and marginal farmers in Assam and they have generally small holding for cultivation and their production level is also not good. Therefore, it is very difficult for them to sustain their livelihood security by working individually. So, by working in a group they will be more benefited. Keeping in view these above mentioned circumstances, the present study was planned in light of the specific objective: To find out the differential effectiveness of farmers’ groups organized under ATMA in Jorhat district of Assam.

METHODOLOGY

The present study was conducted in Jorhat, Titabar and Majuli sub-divisions of Jorhat district of Assam. Two development blocks from each sub-division i.e. Central Jorhat Dev. Block & Kaliapani Dev. Block from Jorhat, Jorhat Dev. Block & Titabar Dev. Block from Titabar and Ujoni Majuli Dev. Block & Majuli Dev. Block from Majuli subdivision were selected purposively and from each selected development block, two villages were selected purposively where ATMA programme is running well. From each selected village, two farmers’ groups were selected i.e. eight (8) farmers groups from each selected sub-division were selected randomly. Thus the total numbers of farmers’ groups for the study were twenty four (24) nos. From each selected farmers’ group (10-20 no. of members group), seven (7) nos. of group members were selected including the president and the secretary of the farmers’ group. Thus the total numbers of respondents were 168. The data were collected by the investigator through personal interview technique

with the help of structured schedule. The collected data were properly tabulated and analyzed in light of the objectives of the present study. Apart from calculating frequency, percentage, mean, weighted mean and standard deviation; F- test, ‘t’ test and Duncan’s Multiple Range Test (DMRT) were used as statistical techniques for analyzing data, drawing inferences and testing hypotheses.

Fraser (1994) defined effectiveness as a measure of the match between stated goals and their achievement. In the present study, effectiveness of farmers’ groups can be operationalized as the “score obtained by a group based on selected indicators of performance assessed on a three (3) point continuum namely ‘Highly Effective’, ‘Effective’ and ‘Less Effective’.

To measure the effectiveness of farmers’ groups, Effectiveness Index (EI) of each farmer’s group were computed with the help of the following formula:

$$EI = \frac{\text{Scores obtained by farmers group}}{\text{Actual total score}} \times 100$$

Based on the scores obtained, the farmers’ groups were classified into three categories with the help of Dasgupta (1989) method as given below:

Category	Range
Less Effective	Below 71.84
Effective	71.84–97.44
Highly Effective	Above 97.44

The differential effectiveness of farmers’ groups was tested with the help of ‘F’ test and to test the differences among farmers’ groups, the Duncan’s Multiple Range Test (DMRT) was used in the present study.

RESULTS AND DISCUSSION

The data presented in the Table 1 revealed that majority (95.83%) of the farmers’ groups were effective

Table 1. Distribution of Farmers’ groups according to their group effectiveness

Categories	Score range	Jorhat Subdivi.		Titabar Subdivi		Majuli Subdivi		Overall	
		No.	%	No.	%	No.	%	No.	%
Less Effective	Below 71.84	0	0.00	1	12.50	0	0.00	1	4.17
Effective	71.84-97.44	8	100.00	7	87.50	8	100.00	23	95.83
Highly Effective	Above 97.44	0	0.00	0	0.00	0	0.00	0	0.00
Total		8	100.00	8	100.00	8	100.00	24	100.00

Mean = 84.64

S.D. = 12.8

followed by 4.17 percent less effective in overall sample. Not a single group was found to be highly effective in all the three sub-divisions. *Ojha (2001)* quoted that “there should be rotation of group leadership so that all members of the group get an opportunity to play managerial role”. He revealed that group members were lacking training, guidance in selecting an activity, its management, marketing etc. In Titabar sub-division, a farmers’ group was found to be less effective. The reason behind the less effectiveness of the farmers’ group from Titabar sub-division was that the group members were not properly selected. Even some of the farmers were not aware that they are a part of the farmers’ group. The leadership quality and the attitude of the president and the secretary towards farmers’ groups were also not good. As a result they could not produce better performance as compared to all other farmers’ groups organized under ATMA selected for the present study.

The differential effectiveness of farmers’ groups was tested with the help of “F” test, results of which are given in Table-2, 3, 4 & 5.

Table 2. ANOVA for Jorhat sub-division

Source	SS	Df	MS	‘F’ value
Group	3.53	7	0.51	1.12
Error	36.18	80	0.45	
Total	39.72	87	-	

It is evident from Table 2 that the calculated value of ‘F’ was not significant at 0.01 level of probability which indicates that there is no significant difference among the Farmers’ groups in Jorhat sub-division. Hence, all the farmers’ groups are homogeneous in nature in Jorhat sub-division.

Table 3. ANOVA for Titabar sub-division

Source	SS	Df	MS	‘F’ value
Group	23.63	7	3.38	7.43*
Error	36.36	80	0.46	
Total	59.99	87	-	

* Significant at 0.05 level of probability

It can be seen from Table 3 that calculated value of ‘F’ (7.425*) was significant at 0.01 level of probability which indicates that there is significant differences among the Farmers’ groups in Titabar sub-division. Therefore, the farmers’ groups are not homogeneous.

Table 4. ANOVA for Majuli sub-division

Source	SS	Df	MS	‘F’ value
Group	1.27	7	0.18	0.4
Error	36.00	80	0.45	
Total	37.27	87	-	

It is evident from Table 4 that the calculated value of ‘F’ was not significant at 0.01 level of probability which indicates that there is no significant difference among the Farmers’ groups in Majuli sub-division. Hence, all the farmers’ groups are homogeneous in nature in Majuli sub-division.

Table 5. ANOVA for Overall Sample

Source	SS	Df	MS	‘F’ value
Group	35.08	23	1.53	3.37*
Error	108.55	240	0.45	
Total	143.62	263		

* Significant at 0.05 level of probability

The findings presented in Table-5 shows that the calculated value of ‘F’ (3.372*) was significant at 0.01 level of probability which indicates that there is significant differences among the Farmers’ groups in overall sample. This indicates that the farmers’ groups are not homogeneous in overall sample.

Since the calculated value of ‘F’ was significant at 0.01 level of probability, therefore there were significant differences among the farmers’ groups in Titabar sub-division and overall Jorhat district. So, to test the differences among farmers’ groups, the Duncan’s Multiple Range Test (DMRT) was used in the present study. The findings of the DMRT test are given in Table 6 (a, b, c & d).

Table 6 (a) Group effectiveness of Jorhat sub-division (DMRT test)

Groups	N	Subset	
		1	2
6	11	2.1818(a)	-
7	11	2.3636(a)	-
3	11	2.5455(a)	-
4	11	2.5455(a)	-
5	11	2.5455(a)	-
2	11	2.6364(a)	-
1	11	2.8182(a)	-
8	11	2.8182(a)	-
Sig.		0.060	-

It can be seen from the Table 6(a) that all the selected farmers' groups of Jorhat sub-division were homogeneous in nature. This means that there is no significant difference among the farmers' groups of Jorhat sub-division.

Table 6 (b). Group effectiveness of Titabar sub-division (DMRT test)

Groups	N	Subset	
		1	2
4	11	0.9091 (a)	
6	11		2.1818 (b)
2	11		2.3636 (b)
7	11		2.3636 (b)
1	11		2.4545 (b)
3	11		2.4545 (b)
8	11		2.5455 (b)
5	11		2.6364 (b)
Sig.		1.000	0.179

It can be seen from the Table 6 (b) that all the selected farmers' groups of Titabar sub-division were not under the same subset i.e. the groups are heterogeneous in nature. This means that there is significant difference among the farmers' groups of Titabar sub-division. It is seen that one farmers' group (no.4) differed significantly (mean 0.9091) as compared to other farmers' groups of Titabar sub-division.

Table 6 (c). Group effectiveness of Majuli sub-division (DMRT test)

Groups	N	Subset	
		1	2
4	11	2.2727 (a)	-
8	11	2.6364 (a)	-
1	11	2.6364 (a)	-
2	11	2.6364 (a)	-
3	11	2.6364 (a)	-
5	11	2.6364 (a)	-
6	11	2.6364 (a)	-
7	11	2.6364 (a)	-
Sig.		0.287	-

It can be seen from the Table 6(c) that all the selected farmers' groups of Majuli sub-division were homogeneous in nature. This means that there is no significant difference among the farmers' groups of Majuli sub-division.

It can be seen from the Table 6 (d) that all the selected farmers' groups of overall sample were not

Table 6 (d). Group effectiveness of Overall sample (DMRT test)

Groups	N	Subset	
		1	2
12	11	0.9091 (a)	
14	11		2.1818 (b)
6	11		2.1818 (b)
20	11		2.2727 (b)
7	11		2.3636 (b)
10	11		2.3636 (b)
15	11		2.3636 (b)
9	11		2.4545 (b)
11	11		2.4545 (b)
3	11		2.5455 (b)
4	11		2.5455 (b)
16	11		2.5455 (b)
5	11		2.5455 (b)
24	11		2.6364 (b)
2	11		2.6364 (b)
13	11		2.6364 (b)
17	11		2.6364 (b)
18	11		2.6364 (b)
19	11		2.6364 (b)
21	11		2.6364 (b)
22	11		2.6364 (b)
23	11		2.6364 (b)
1	11		2.8182 (b)
8	11		2.8182 (b)
Sig.		1.000	.081

under the same subset i.e. the groups are heterogeneous in nature. This means that there is significant difference among the farmers' groups. It is seen that one farmers' group (no. 12) differed significantly (mean 0.9091) as compared to other farmers' groups in overall sample.

Comparison between effectiveness index score and ladder score: To test the authenticity of the present study, 't' test was done to find out the significant difference between the effectiveness index score obtained by each farmers' group and the ladder score obtained based on the opinions of the members of the farmers' groups. The mean score obtained by the farmers' groups was 84.64 with a S.D. of 12.8 and the ladder score obtained by the farmers' groups was 6.08 with a S.D of 1.5, the data of which are presented in the Table 7(a). It is evident from the Table 7(b) that the calculated value of 't' was significant at 0.01 level of probability which indicates that the results obtained from the present study are valid.

Table 7(a). 't' test (Group Statistics)

Categories	N	Mean	SD	SE Mean
EI	24	84.64	12.80	2.61
Ladder Score	24	6.08	1.50	0.31

Table 7(b). 't' test for equality of means

Category	't'	Df	Mean diff.	SE diff.
EI Score – Ladder Score	29.86*	46	78.55	2.63

*Significant at 0.01 level of probability.

Problems faced by the members of the farmers groups to sustain their group activities: The various problems and difficulties faced by the members of farmers' groups are presented under this sub-head. The findings revealed that major problems faced by the group members includes non-availability of different irrigation facilities, lack of special market for organic produce, lack of need based training, lack of electricity, non availability of seed in the village at proper time, non availability of own vehicle, unavailability of raw materials needed for storage construction, too costly infrastructure, unavailability of organic manures and high cost of pump sets and other equipments required for irrigation.

CONCLUSION

From the above discussion it can be summed up that majority (95.83%) of the farmers' groups were effective and only 4.17 percent (only one group) of the selected farmers' groups were less effective in overall

sample. To test the differential effectiveness of the farmers' groups, 'F' test and Duncan's Multiple Range Test (DMRT) were used the result of which shows that all the groups differed in terms of effectiveness from the one farmers' group. Not a single group was found to be highly effective in all the three sub-divisions. But, overall effectiveness of the selected farmers' groups organized under ATMA was found to be promising. Further the study explored that the ATMA programme is running successfully in the study area, because farmer is the centre of focus for development in the ATMA programme and majority of the selected farmers' groups developed by them were effective. It is well known that farmers have not only technological but also other needs namely inputs, credit, marketing, social facilitation for group action, conflict resolution, community organization etc. Public sector alone is not able to meet all these needs in an effective manner. Therefore, there is a need to identify appropriate organizations to meet specific needs of farmers of Assam based upon their comparative advantages to farmers. So, it will serve as useful information for the planners and policy makers to know about the impact of the ATMA programme at district level to improve the livelihood opportunity of the farmers in Assam as well as in North-Eastern states of India.

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