

**Research Article**

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## Participation of ATMA (Agricultural Technology Management Agency) Members in Group Activities and Promotion of Sustainable Agricultural Practices in Karaikal District, Puducherry

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### ABSTRACT

A study was conducted in among five selected ATMA (Agricultural Technology Management Agency) groups. A total of 100 farmers from five groups were selected by employing random sampling. Participation was studied in three dimensions viz., group sustainability, sustainable agricultural practices and participation in post harvest technologies. The study reveals that majority of the members belong to medium level of participation in sustainable agricultural practices and participate more in group activities viz., group planning, maintaining transparency, decision making, shouldering responsibilities planning, decision making and auditing. Further, the study reveals that information source utilisation and information sharing behaviour of the group members showed a positive and significant relation with the participation of ATMA group members in sustainable agricultural practices. Addition of new members and lack in guidance were the problems expressed by the respondents. Group promoting initiatives and training on sustainable function of groups were the suggestions offered by the members of the group.

**Keywords:** ATMA; Farmers' Group Approach; participation; post harvest technologies; Puducherry

### INTRODUCTION

Farmers' group approaches are the need of the hour to cater to the needs of current challenges in agriculture. The major advantages of group approaches are commercialization, bottom up planning, social equality, effective usage of ICT tools for transfer of technologies and participatory. The major challenging task of group approach is the sustainability. The groups promoted for a particular purpose have to sustain forever, so as to

comply the requirement of ATMA (Agricultural Technology Management Agency). The best sustainable agricultural practices of a farming community which are adopted by them over a period of time also play a major role in the effective functioning of the group. With this background a study was conducted in Karaikal district of Puducherry U.T among the members of ATMA group to study the participation of group members in group activities and in sustainable agricultural practices.

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## METHODOLOGY

Respondents from five ATMA groups were selected based on their effective functioning. These groups were promoted by the Karaikal ATMA. A total of 100 farmers from five groups were selected by employing random sampling to study the participation. Participation was studied in three dimensions viz., group sustainability, sustainable agricultural practices and participation in post harvest technologies. To study the participation in group for its sustainability 10 items were selected. To study the sustainable agricultural practices 16 items were studied. Participation in post harvest issues for sustainable agriculture consisted of nine items. Each individual was asked about three level of participation against each item. A score of three was given for more level of participation, two for moderate level of participation and

two for less/no level of participation. The scores for all the items were added up for each respondent and his total participation score was achieved. Simple percentage analysis and correlation were adopted in this study.

## FINDINGS AND DISCUSSION

The results of the profile of respondents, overall participation in sustainable agricultural practices, group sustainability, and post harvest activities are presented in this section.

### Profile of the respondents

The results of the profile of the respondents are presented in Table 1.

From Table 1 it is observed that, majority of the farmers of the five group belong to medium level of age group (64.00 percent), educational status (62.00 per cent), farm size (92.00 percent), annual income

**Table 1.**  
**Distribution of Respondents according to their Profile**

(n = 100)

Sl. No.	Profile	Category					
		Low		Medium		High	
		Number	%	Number	%	Number	%
1.	Age	12	12.00	64	64.00	24	24.00
2.	Educational Status	20	20.00	62	62.00	18	18.00
3.	Farm Size	-	-	92	92.00	08	08.00
4.	Farming Experience	21	21.00	68	68.00	11	11.00
5.	Annual Income	-	-	87	87.00	13	13.00
6.	Information Source Utilisation	23	23.00	60	60.00	17	17.00
7.	Information Sharing Behaviour	18	18.00	64	64.00	18	18.00

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(87.00 percent), information source utilisation (60.00 percent) and information sharing behaviour (64.00 percent).

Results showed that more than half of the farmers belonged to medium level of participation. The possible reasons might have been due to the medium level of information source utilisation and information sharing behaviour of the farmers which plays a major role in the ATMA for group functioning. This shows that there is a need for enhancing the information access and handling by the group of farmers through extension interventions.

#### Participation Pattern of Group Members in Group Activities for Sustainability

The results of the participation of group members in sustainable group activities are presented in Table 2.

From Table 2, it is understood that nearly one-third of the respondents participate more in group activities for sustaining the group functioning viz., group planning (36.00%), maintaining transparency (34.00%), decision making (33.00%), shouldering responsibilities and planning (36.00%) decision making and auditing (33.00%). More than half of the respondents were categorised under medium level of participation for the activities viz., group formation, engagement in group functioning attending group meetings. A little more than one-third of respondents were not participating activities like interacting with other agencies, maintaining transparency and auditing of accounts. The findings reveals that majority of the respondents were shown a moderate level of participation

**Table 2.**  
**Distribution of Respondents according to their Participation in Group Activities**

(n=100)

Sl. No.	Practices	Level of participation					
		More		Moderate		No Participation	
		No.	%	No.	%	No.	%
1.	Involvement in group formation	27	27.00	50	50.00	23	23.00
2.	Role in group planning	36	36.00	49	49.00	15	15.00
3.	Extent of decision making	33	33.00	54	54.00	13	13.00
4.	Involvement in group functioning	20	20.00	52	52.00	28	28.00
5.	Attending group meetings and deliberations	24	24.00	51	51.00	25	25.00
6.	Shouldering responsibilities	36	36.00	46	46.00	18	18.00
7.	Interacting with other agencies	21	21.00	43	43.00	36	36.00
8.	Solving group problems	18	18.00	42	42.00	40	40.00
9.	Maintaining transparency among members	34	34.00	31	31.00	35	35.00
10.	Auditing of accounts	33	33.00	32	32.00	35	35.00

**Table 3.**  
**Distribution of respondents according to Their Participation in Sustainable Agricultural Practices**  
 (n=100)

Sl. No.	Technologies	Level of Participation					
		More		Moderate		No Participation	
		No.	%	No.	%	No.	%
1.	Summer ploughing	37	37.00	35	35.00	28	28.00
2.	Establishing community nursery	41	41.00	28	28.00	31	31.00
3.	Selection of variety	48	48.00	31	31.00	21	21.00
4.	Synchronised planting	15	15.00	42	42.00	43	43.00
5.	Growing of Azolla, BGA	26	26.00	44	44.00	30	30.00
6.	Indenting and sharing of implements	26	26.00	45	45.00	29	29.00
7.	Mass production of composting / rural waste composting	20	20.00	39	39.00	41	41.00
8.	Sharing of water among members	27	27.00	47	47.00	26	26.00
9.	Bulk purchase and sharing of quality inputs	47	47.00	25	25.00	28	28.00
10.	Labour management	16	16.00	38	38.00	46	46.00
11.	Adopting IPM practices for pest control	55	55.00	33	33.00	12	12.00
a	Cultural methods of pest control	27	27.00	21	21.00	52	52.00
b	Chemical methods of pest control	54	54.00	28	28.00	17	17.00
c	Biological method of pest control	44	44.00	37	37.00	19	19.00
d	Physical method of pest control	43	43.00	32	32.00	25	25.00
12.	Adopting INM practices for nutrients management	15	15.00	63	63.00	22	22.00
a	Soil testing	10	10.00	29	29.00	61	61.00
b	Blanket recommendation	10	10.00	31	31.00	59	59.00
c	Soil test based recommendation	5	5.00	24	24.00	71	71.00
13.	Preparation of organic inputs pancha kavya, leaf extracts etc.,	33	33.00	34	34.00	43	43.00
14.	Adopting recommended technologies	8	8.00	51	51.00	41	41.00
15.	Adopting new technologies	13	13.00	41	41.00	46	46.00
16.	Phased harvesting	8	8.00	32	32.00	60	60.00

in group functioning, which shows sharing of responsibilities and other sustainable measures have to be inculcated among the members of the group. Being in an initial stage of functioning difficulty to cope up to a new venture might be a possible reason for such a moderate level of participation in group functioning.

### **Participation in Sustainable Agricultural Practices by the Group Members**

Table 3 explains the distribution of respondents according to their level of participation in various sustainable agricultural practices.

It is inferred that the practices like summer ploughing (37.00 percent), establishing community nursery (41.00 percent), selection of variety (48.00 percent), bulk purchase and sharing of quality inputs (47.00 percent), adopting IPM practices for pest control (55.00 percent), chemical, biological and physical method of pest control were found with more level of participation. The possible reasons for the more participation might be due to the interest of the farmers and their concern about environmental pollution due to training offered by the extension agencies.

The practices like synchronised planting (43.00 percent), Mass production of composting / rural waste composting (41.00 percent), Labour management (46.00 percent), soil testing (61.00 percent), following blanket recommendation (59.00 percent), soil test based recommendation (71.00 percent), adopting new technologies (46.00 percent) and phased harvesting (60.00 percent) were

found to have nil participation. The reason for no participation may be due to lack of understanding of new technologies, poor interest shown by the farmers in learning technologies, environmental conditions, urgency due to various socio-economic conditions of the farmers. Hence, these factors may be considered by the extension agencies and leaders of various groups to encourage the farmers and motivate them towards group activities pertaining to sustainable agriculture.

### **Participation in Post Harvest activities of Sustainable Agriculture**

The outcome of ATMA group members' participation in post harvest activities is presented in Table 4.

Table 4 reveals that, among various post harvest issues, sharing of market information (64.00 percent) followed by identification of potential markets (44.00 percent) were found to be the most participatory activity among the farmers of the ATMA study groups. The results further state that, even though the groups were in progressing stage, their functioning was in dynamic way since the participation of the issues related to post harvest was at moderate level. This gives ample scope for extension functionaries to guide the groups in a right direction.

### **Correlation between Profile and Participation of Group Members in Sustainable Agricultural Practices**

From Table 5, it is concluded that among the profile characteristics of the

**Table 4.**  
**Distribution of respondents according to their Participation in Post Harvest activities of Sustainable Agriculture**

(n=100)

Sl. No	Practices	Level of participation					
		More		Moderate		No Participation	
		No.	%	No.	%	No.	%
1.	Establishing common storage for products	21	21.00	45	45.00	34	34.00
2.	Sharing of market information	74	74.00	13	23.00	13	13.00
3.	Purchase and sharing of storage devices	20	20.00	37	37.00	43	43.00
4.	Involvement in processing of produces	32	32.00	32	32.00	36	36.00
5.	Using common transport of produce to storage/market	20	20.00	26	26.00	54	54.00
6.	Identifying potential markets	44	44.00	36	36.00	20	20.00
7.	Assessing market demands	12	12.00	46	46.00	42	42.00
8.	Protection from animals and theft	18	18.00	55	55.00	27	27.00
9.	Preventing post harvest losses	25	25.00	42	32.00	33	33.00

**Table 5.**  
**Correlation between Profile and Participation of Group Members**

(n=100)

Sl. No.	Variables	Participation ('r' value)
1.	Age	-0.0991
2.	Educational status	-0.0435
3.	Farm size	0.0599
4.	Experience	-0.0783
5.	Annual income	0.2911
6.	Information source utilisation	0.3879*
7.	Information sharing behaviour	0.2275*

**Table 6.**  
**Distribution of Respondents according to Constraints for promoting Group Functioning**  
(n=100)

Sl. No.	Statement	Number	Percentage
1.	Lack of guidance in group functioning	75	75.00
2.	Addition of new members in groups	75	75.00
3.	Mismatching of interest among groups	60	60.00
4.	Periodicity of conducting group meetings	30	30.00
5.	Lack of scope for organising groups	25	25.00

respondents, information source utilisation and information sharing behaviour of the group members showed a positive and significant relation with the participation of ATMA group members in the sustainable agricultural practices in the study area. These results showed that information was the key for promoting any group related activities. The sustainable agricultural practices by the group members include technology, group functioning and post harvest issues especially marketing interventions. Hence, it is evident that the information is essential to make the component a sustainable one and the results also reveal the same.

#### **Constraints encountered by the respondents in practicing Sustainable Agriculture**

Table 6 depicts the constraints experienced by the ATMA group members in practicing sustainable agriculture.

The major constraints expressed by the responders were lack in guidance and addition of new members in the group creating problem and affecting the co-ordination among them. Further, mismatching of interest among group members (60.00 percent), periodicity of conducting group meetings (30.00 percent) and the limited scope for organising groups were other constraints expressed by the group members.

#### **Suggestions given by the respondents for promoting Participation of ATMA Group Members in Sustainable Agricultural Practices.**

The results of the suggestions given by the respondents to promote the level of participation in the sustainable agricultural practices by the members of selected ATMA group indicated that most of the respondents (77.00 percent) expressed the need of more extension support to develop the effectiveness of the group and establishing infrastructure facilities for storage of produce.

**CONCLUSION**

The results of the above study inferred that wide scope exists to promote the participation level of group members in ATMA. Since the study groups are in developing stage they have to adequately be counselled and trained towards group functioning. The

involvement of research institutions, financial institutions, shandies, NGOs and private concerns have to be encouraged for the sustainable functioning of ATMA groups. The interlinking of groups at village, block, district and state level has to be explored for the effective function of ATMA groups.