

Research Paper

# Strengthening Technology Delivery System through Empowerment of Village Organizations

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## ABSTRACT

Village level organizations and leaders play an important role in the decision-making process with respect to technology adoption and spread in a community. Often the village level leaders are constrained with issues such as lack of adequate knowledge, poor communication skill, poor accessibility to right technology sources, exploitation by input dealers and prevalence of conflicts due to local groupism among farmers. The present study was conducted among 207 farmers, who were office bearers or active members of formal village organizations (FVO) belonging to five districts of Tamil Nadu, India. Bureaucratic protocols and inadequate financial resources were the major constraints in the functioning of FVOs, while communication skills and knowledge for development schemes & ICT tools were the major capacity development needs perceived by the members & leaders of FVOs. It was also found out that FVOs can be integrated with overall agricultural development of the village and surrounding areas if the leaders and members involved in the technology delivery mechanism as partners and properly utilized by the extension functionaries.

## HIGHLIGHTS

- The functioning of Formal Village Organizations (FVOs) was found to be constrained by avoidable bureaucratic protocols and inadequate financial resources. The study suggests FVOs to be formally involved in the farm technology mechanism and to be properly utilized by the extension agents in the villages.

**Keywords:** Technology delivery, Village organization, Empowerment, Performance index, Leadership, Capacity development, Constraint

Technological changes in a system involves more than one individual and often constrained by local conflicts, non-involvement of local leaders and grass root level organizations. Leaders and members of Formal Village level Organisations (FVOs) play an important role in influencing the decision-making process in both micro (the individual farmer) and macro (community) levels. Farmers require a wide range of support to address the challenges such as

shrinking resource base, changes in farming systems, international developments, climate change etc. The extension system therefore must be empowered with adequate knowledge and skill to deliver (i) right technology and methodology, (ii) market information

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and decisions, (iii) changes to be made in accordance with national and international developments/policies (iv) financial and investment decisions and (v) resource optimization, production plan and risk management. In this context FVOs play an important role for effective technology selection, optimization, application and delivery management. Many social – development projects across the world had succeeded by setting up village-level organizations (Hossain and Alam, 1999). Since agricultural technological interventions are also required for diversification of occupational structure and strengthening income generation activities, the extension system needs to harness the opportunities of involving FVOs in the technology delivery programmes. Though previous studies have shown that grassroots level organizations had been playing a role in technology-transfer (Chaudhary and Maharjan, 2010), in-depth studies on the involvement of such organizations relating to their competencies and constraints are scarce.

Hence, in this study, issues related to involvement of FVOs in the technology delivery system were analysed with respect to aspects such as institutional problems, competencies, preparedness and various limiting factors. The performance of FVOs, their involvement and commitment towards agricultural development work, the leadership constraints etc., have been studied in the five districts of Tamil Nadu state selected at random for the study. The results of the study helped to formulate suitable capacity development programmes for the selected leaders, formulate linkages and partnership with the research-extension-farmer-industry continuum in the state.

## **MATERIALS AND METHODS**

The present study was conducted in five districts namely, Vellore, Dharmapuri, Nagapattinam, Karur and Tirunelveli in Tamil Nadu state which were selected at random. From each of the above five districts, five villages were selected randomly for the study. Leaders and member farmers belonging to FVOs functioning in the 25 selected villages were the respondents selected for the study. Farmer cooperatives, sugarcane farmer associations, village level functional societies related

to agriculture and allied sectors, banking and financial institutions, Farmer Interest Groups (FIGs), Commodity Interest Groups (CIGs), Farmer Producer Companies (FPOs) etc were the FVOs included in the study.

A three-step methodology was adopted to select the farmers in the selected districts. In the first step, a list of progressive farmers and formal village organizations functioning in the villages was prepared with the help of cane development personnel of sugar mills located in each district. In the second step, the farmers in the lists were analysed for their affiliations membership in formal village organizations and general acceptability. In the third step, the prepared list of farmers was subjected to socio-gram analysis with their fellow farmers and cane development personnel for knowing their preferences and perception about their qualities to work as leaders. Based on the responses, a list of 207 farmers having membership in one or more FVOs was prepared for each district to get their responses for capacity need analysis. Out of 207 selected farmers, 124 were holding leadership positions and remaining were active members of one or more functional FVOs. Responses were obtained from all the 207 respondents in the structured schedule specially developed for the study. From the list of FVOs which were functioning for the last five years or more, two FVOs were selected randomly from each village. Performance of ten FVOs in each district was studied.

Performance of formal village level organizations, their involvement and commitment towards agricultural development work, the leadership pattern, communication skills, motivational level of the selected village level leaders and members of the village level organizations, their attitude towards extension and development programmes in agriculture, knowledge levels in general agricultural development, technologies suitable for their farming system and constraints experienced by them were studied.

Attitude towards agricultural development, level of motivation, level of commitment for common cause, and communication skill were studied using scale, tests and indexes developed by Venkatasubramanian *et al.* (2003). Knowledge test about innovations in agricultural

farming developed by Venkatasubramanian and Fulzele (1997) was used for the study.

Interactive meetings and focus groups were organized in the study area for interaction and collection of their response. Personal visits to farmers' field in the selected villages in each of the district were undertaken to know the grass root level reality for elimination of subjective errors while making inferences and to triangulate the data obtained from farmers and the cane development personnel. The data thus collected were tabulated and subjected to simple statistical analysis such as mean, standard deviation, co-efficient of variation, calculation of 't' values and rank order analysis by using the methods suggested by Snedecor and Cochran (1967).

## RESULTS AND DISCUSSION

**Performance of FVOs:** Apart from the leader, organizational performance is the net result of combined efforts of all members in the organization towards achieving the given goal. Due to multi various activities assigned to the FVOs, it is difficult to define the individual role and evaluate the performance of these organizations (Khandalwala, 1977). Keeping in mind about the complexities associated with the fixing of performance criterion for the FVOs due to the heterogeneity in nature of the organization selected, the performance of the FVOs was studied through assigning scores to the ten selected performance indicators namely, (i) target achievement in terms of their activities, (ii) availability and accessibility of its services to the members, (iii) infrastructural facilities, (iv) financial status, (v) membership turnover and participation in various meetings and activities, (vi) regularity in conducting meetings, elections, achievements, (vii) communication network established with public and members, (viii) awards and recognition received for their good work (ix) contribution to the social and public cause, (x) village development and member welfare activities undertaken for the preceding five years. The mean performance percentage and performance gap for the FVOs functioning in the five selected districts are presented in Table 1.

**Table 1:** Performance Index of FVOs in the five selected Districts (N = 50)

District	Mean Performance Score
Vellore	43.14
Dharmapuri,	51.23
Nagapatinam	47.31
Karur	56.23
Tirunelveli	53.31
Average	50.24

*Maximum Possible Performance Score: 100.*

From Table 1, it is inferred that average mean performance of FVOs functioning in the Karur district was relatively high with a performance score of 56.23 followed by Tirunelveli (53.31) and Dharmapuri (51.23) districts. These three districts FVOs were well supported by the sugar mills namely EID Parry, Dharani sugars and Dharmapuri co-operative sugar mills, respectively. In addition, Dairy cooperatives, Primary Agricultural Cooperative Bank, FIGs, FPCs and CIGs were also successfully functioning in the above three districts in comparison to other two districts. They receive good support in terms of technology back stopping, input supply and hand-holding from sugar mills and District Dairy Cooperative Unions. The FVOs functioning in Vellore and Nagapattinam were reported to be constrained by financial support due to inadequate institutional linkages and less number of welfare activities undertaken by them. Poor member participation was one of the constraints experienced by all the five selected FVOs in Nagapattinam district. The performance of FVOs in terms of activities related to common property management, financial discipline, membership fee payment, organising regular meetings and establishing linkages with other development departments for the benefit of member farmers need to be improved in all the five districts.

Majority (76.23 %) of the leaders and members of the FVOs felt that the agricultural development were given less support and priority from district administration. Extension advisory support was inadequate for availing the benefits of various schemes implemented by Government was perceived by about 67.11 percentage of the respondents.

**Personality Traits of Leaders and Members of FVOs:** The successful performance of the FVOs depends upon the personality characteristics of the members, types of leadership, cordiality among members, commitment toward organization goal and public cause. The personality characteristics of the leaders and members of the FVOs were studied and given in Table 2. The respondents were in the mean age group of 47 with an average family size of five. Out of 207 respondents, 134 were graduates and remaining were literates and had good exposure to mass media and worldly knowledge. From the table it can be inferred from the mean score that the respondents had to improve their motivational level and cultivate more favourable attitude towards the activities related to FVOs and their role in development. A similar finding was reported by Venkatasubramanian *et al.* (2003). From the mean values related to level of commitment towards common cause, knowledge about various agricultural development

programmes implemented by Government and level of communication and its adequacy followed in FVOs and interaction between the members it can be inferred that all these traits needed improvement.

**Constraints Experienced by FVOs:** On the basis of mean, standard deviation and co-efficient of variation values obtained, the constraints experienced by the FVOs were ranked and the ten most important constraints are given in Table 3. Red tapism and Bureacratic domination/ protocols, Inadequate finance and resource constraints and hurdles in taking fair decisions due to socio-political issues turned out to be the first three most important constraints experienced in the day to day functioning of FVOs. Inadequate management skills, personal interest and corruption, poor communication skills and delay in decision making, lack of coordination and cooperation from other development departments, lack of commitment by members, poor awareness about various Government programmes and inadequate

**Table 2:** Personality Traits of the Leaders and Members of the selected Formal Village Organizations (N = 207)

Sl. No.	Traits	Mean Value
1	Age (Years)	47.23
2.	Mass Media exposure (Maximum possible score = 15)	10.13
3	Extension Contact (score) (Maximum Possible score = 20)	9.21
4	Level of Motivation (score) (Maximum Possible score = 50)	34.00
5	Attitude toward agriculture development (score) (Maximum Possible score = 50)	31.00
6	Level of commitment for common cause(score) (Maximum Possible score = 10)	5.44
7	Knowledge about agricultural development programmes (score) (Maximum Possible score = 10)	5.34

**Table 3:** Constraints in Functioning of Formal Village Organisations (FVOs)

Sl. No.	Constraints	Mean	SD	CV	Rank
1	Red tapism and Bureacratic domination/ protocols	3.21	0.96	29.84	I
2	Inadequate finance and resource constraints	3.14	0.99	30.91	II
3	Hurdles in taking fare decision due to socio-political issues	3.11	1.02	32.27	III
4	Inadequate management skills	2.74	1.17	39.73	IV
5	Personal interest and corruption	2.62	1.16	39.64	V
6	Poor communication skills and delays in decision making	3.14	1.28	40.76	VI
7	Lack of coordination and cooperation from other development departments	3.09	1.26	40.77	VII
8	Lack of commitment by members	3.06	1.25	40.85	VIII
9	Poor awareness about various Government programmes for agricultural development and farmers	2.89	1.18	41.17	IX
10	Inadequate Extension contacts	2.82	1.20	42.55	X

extension contact were other important constraints that were perceived as bottlenecks in the effective and efficient functioning of the FVOs. These findings are in line with that of Venkatasubramanian *et al.* (2003).

### Capacity Development Needs for effective Leadership and Management

Responses of the leaders and members of the FVOs for improving their managerial ability and skills through addressing their capacity development need were obtained. The first six important needs based on their score values are listed in the Table 4. Those needs perceived by more than 50 percent respondents have been selected and arranged rank wise. Majority of the respondents (89.00 percent) opined that improving their communication skills and other skills associated with leadership such as planning, organizing, coordination of activities etc as the important capacity development need required for managing the affairs of FVOs. Next important are their knowledge about development schemes and use of ICT in continuous knowledge updation and in their day to day operations associated with FVOs. Most of them were lacking computer working knowledge in spite of their operational skills on using mobile apps. Most of the FVOs were facing internal differences among the members leading to the perception that improving inter personal and conflict management skills as most important managerial need. This finding is in conformity with Venkatasubramanian *et al.* (2003).

Other two important capacity development needs perceived as important by the respondents were functional knowledge on co-operatives, and Farmer Producer companies, Marketing and credit management and exposure visits for updating their knowledge. The above findings helped to design the capacity development modules for inclusion in the capacity development programmes organised for the 125 selected farm leaders, subsequently.

**Role of FVOs in Agricultural development:** FVOs play an important role in bringing about changes in the grass root level. With the available manpower in the extension system, real development cannot be achieved unless village level organizations are adequately strengthened and integrated with the development programmes. Therefore, an attempt was made to know the feasibility about the possible areas of their association and the role FVOs can play in the agricultural development. The responses obtained are presented in Table 5.

Some of the major areas wherein FVOs can be associated, as perceived by the leaders and members of the FVOs were, arranging of inputs and credit supplies to village farmers, Marketing related work, organizing educational visits, Community Demonstration of technologies, Reporting of Pests and Diseases and Farmer led extension programmes. Majority of the farmers did not know about the importance and effectiveness of farmer led programmes. These findings are in line with that of Venkatasubramanian *et al.* (2003).

**Table 4:** Capacity Development Needs Perceived by Leaders and Members of FVOs for effective Leadership and Management (N= 207)

Sl. No.	Needs Perceived	Number of Farmers	Percentage	Rank
1	Effective Communication/public speaking and leadership skills	184	89.00	I
2	Knowledge about development schemes implemented by Government and ICT tools use	172	83.09	II
3	Improving interpersonal relationship	171	82.60	III
4	Conflict management	154	74.39	IV
5	Functional knowledge on cooperatives and Farmer Producer companies	141	68.11	V
6	Marketing and credit management	134	64.73	VI
7	Exposure visits to research institutes, demonstration fields and industries	119	57.48	VII

**Table 5:** Role of FVOs in Agricultural development as Perceived by Leaders and Members of FVOs

Sl. No.	Possible Role in Agricultural Development	Number of farmers	Percentage	Rank
1	Arranging of inputs and credit supplies to village farmers	173	78.74	I
2	Marketing related work	167	80.67	II
3	Arranging educational visits	153	73.91	III
4	Community Demonstration of technologies	141	68.11	IV
5	Reporting of Pests and Diseases	137	66.18	V
6	Farmer led extension programmes	112	54.10	VI

The majority of the respondents felt that input supply and marketing as the major activities related to FVOs. It is therefore, important to create awareness among the FVOs about various other activities they can undertake for the benefit of farming community.

## CONCLUSION

FVOs play an important role in the farmers and their resources. The FVOs need to be strengthened for achieving effectiveness and efficiency in their performance. Village level leaders are constrained with issues lack of adequate knowledge, poor communication skill, poor accessibility to right technology sources, exploitation by input dealers and prevalence of conflicts due to groupism among farmers. The study has delineated the performance level of the FVOs functioning in the five districts namely Vellore, Dharmapuri, Karur, Nagapattinam and Tirunelveli of Tamil Nadu state revealing that bureaucratic protocols and inadequate financial resources were the major constraints faced by the FVOs. Majority of the respondents opined that improving their communication skills and other skills associated with leadership such as planning, organizing, coordination of activities etc as the important capacity development need required for managing the affairs of FVOs.

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