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Institutionalization Of Farmer's Field School In Nepal

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Abstract: ***This paper is designed to analyze the institutionalization problem for FFS establishment in local community. The sample for the study consisted of all FFS farmers (306) from 12 FFSs. A study on institutional development process of FFS was conducted in Chitwan district of Nepal. A household survey of FFS members trained by 'farmer trainer' (n_1=145) and 'IPM trainer' (n_2=161) was conducted selecting from 82 clusters of FFS (6 FFS clusters in each type) formed from 1998 to 2008 registered in DADO, Chitwan. Level of understanding, agreement to the objectives of national IPM program and leadership quality were directly related to the education level and inversely related to the age category of the respondent. There were significant differences in formalization, physical resource, managerial ability, budget, curriculum development and human resource among the FFS members trained by 'farmer trainer' and 'IPM trainer'. Thus components related to the institutional development of FFS were differing due to age and education category of the respondents.***

Keywords: institutional development, farmer's field school, empowerment

I. INTRODUCTION

Many extension approaches have been implemented in Nepal but very few approaches seems to be effective in proper institutionalization with correct means and plans. Government of Nepal introduced a new extension approach called farmers field school from 1998 to 2008 in Chitwan district of Nepal. This approach was found to be effective in imparting the education on complex agricultural information like integrated pest management (IPM) to the farming community in their local conditions. This research is focused on addressing issues pertaining to the institutionalization of Farmers' Field School (FFS). The FFS was conceptualized and initiated in Nepal in 1997 with the entry point "integrated pest management (IPM) in rice" to promote IPM among rice farmers. There are several important aspects and dimensions of FFS approach of educating, empowering and collective/participatory decision making capacity of farmers as individuals and organized in groups. However, this study is designed to evaluate institutionalization of FFS from the perspective of perception and judgment on the institution building process and issues of farmer's community. IPM-FFS approach was effective in gender participation, local resource utilization, technology replication, farmer to farmer extension. IPM-FFS was also economically beneficial to the farmers, and needed further support for strengthening and sustainability of this approach (Tiwari, Thapa, & Ghimire, 2008). Lot of evidences from the FFS activities showed that it is more than extension method and can develop human and social capital for broader achievements (David & Asamoah, 2011). FFS approach can empower farmers by strengthening the relations and collective action among them. Which is achieved through the development of farmer's ability in decision making. FFS approach is best in empowering both at farmers' level and organizational level (Dzeco, Amilai & Cristovao, 2010). FFS become one of the important approaches in improving local community capacity, national and international cooperation leading to increase farmer's knowledge for new prospect and farm income (Mahboubeh & Ali, 2015). IPM-FFS is one of the programs that is in demand by Nepalese farmers (Kafle et al., 2014). FFS is very effective in adopting the IPM-technology among the farmers of Nepal (Bhattarai & GC, 2015). FFS build up the knowledge and decision skills through a field-based learning. It boosts group effort. FFS are the community based organizations to provide knowledge and

skills necessary for sustainable agricultural production (Fredrix, 2014).

II. RESEARCH METHODOLOGY

Chitwan district was purposively selected. Farmer Field School approach had been started in this district since 1998 by district agriculture development office (DADO). All FFSs (82) formed from 1998 to 2008 registered in DADO Chitwan were the research population. Six (6) clusters of farmer trainer trained FFSs were randomly selected. Again six (6) clusters of IPM trainer trained FFSs of the same VDC/MC sites were selected randomly. Altogether, a complete list of 306 FFS participants from six (6) FFSs who received training on IPM through farmer trainer (n_1=145) and six (6) FFSs who received training on IPM through IPM trainer (n_2=161) was prepared. Individual members of farmer's field school were the unit of analysis. The primary data were collected from the sampled households using pre tested interview schedule. For secondary data, relevant publications and reports of district agriculture development office, Plant Protection Directorate (PPD) and Food and Agriculture Organization (FAO) were consulted. Both qualitative and quantitative research methods were applied to collect information. 'Z value' and 'mean' obtained from Mann Whitney U was used to examine the differences in two types of respondent under study. Computer program Statistical Package for Social Sciences (SPSS) was used to analyze the data. Index values were calculated using the following formula:

Index value = Actual score obtained X 100/ Maximum possible score

III. RESULT AND DISCUSSION

RESPONDENT'S AGE AND EDUCATION WITH INDEX VALUES OF OBJECTIVES AND LEADERSHIP

Index values of the objectives of national IPM program understood, agreed and leadership quality of the respondent were computed to know whether there was any relationship occurred or not. Index values were obtained according to the age and education category of the respondents.

Age category of the respondent	Index values of the objectives of national IPM program understood	Index values of the objectives of national IPM program agreed	Index values of the leadership quality
Young (20-40)	2.01	2.13	3.77
Adult (41-60)	1.94	2.05	3.72
Old (61-72)	0.94	0.91	3.31

Source: Field Survey

Table 1: Comparison of the index values with age category of the respondent Age

The index values in Table 1 revealed that there were inverse relations of age categories of the respondent with level of objectives understood, level of objectives agreed, and leadership quality. Higher level of understanding, agreement and leadership quality of the respondent of the younger age category might be due to the fact that those respondents were relatively more educated human resources and younger people have good leadership traits like active and helpfulness, decision making skills, group mobilization and management technique and representation of FFS interest and norms. This is necessary for institutional development of FFS. Older the age lesser is the opportunity seeking behavior. It might be due to the fact that those people have different problems and liabilities than younger ones.

Educational attainment of the respondent	Index values of the objectives understood	Index values of the objectives agreed	Index value of the leadership quality of the respondent
Poorly literate	1.21	1.26	3.22
Lower education	2.34	2.47	4.02
Higher education	2.83	3.04	4.33

Source: Field Survey

Table 2: Comparison of the index values with education category of the respondent

The index values in Table 2 revealed that there were direct relations of education level of the respondent with level of objectives understood, objectives agreed, and leadership quality. Higher level of understanding, agreement and leadership quality of the respondent was always associated with the higher level of education, which is required to institutionalize FFS at community level. This might be due to the fact that educated respondents were more aware about the stated objectives of the national IPM program and have higher leadership traits than that of lower level educated respondents.

FORMALIZATION OF FFS

Formalization is the degree to which FFS are standardized. Since FFSs were registered and recognized in DADO office, it can be expected always to conduct IPM trainings in a community. Formalization was measured in terms of number of IPM trainings conducted and autonomy of FFS as perceived by farmers. Number of IPM trainings conducted by FFS indicated the functioning of FFS as a training institution in the village.

Number of IPM trainings conducted by FFS	Number of Farmer trainer trained FFS	Number of IPM trainer trained FFS	Total (Number of FFS=12)
1	4	6	10
2	1	0	1
3	1	0	1

Source: Field Survey

Table 3: Number of IPM trainings conducted by type of FFS

The data in Table 3 revealed that ten FFSs conducted only 1 training in IPM .No of IPM trainer trained FFS shows that no FFS could conduct more than 1 trainings. One farmer trainer trained FFSs conducted 2 trainings and one farmer trainer trained FFS conducted 3 trainings in IPM. Thus farmer trainer trained FFS seems to be functioned more as training center in the village.

HUMAN RESOURCE

Human resources are the people who work for a service organization or business combining their efforts, talents, and skills with other resources such as knowledge, materials, and energy to create useful products and services. Human resource development in FFS is a process for developing facilitator through learning experiences to conduct FFS continuously in their community. Human resources were developed via member's empowerment and FFS group empowerment.

EMPOWERMENT OF FFS MEMBERS

Empowerment occurs when an individual is attached with FFS and encouraged to change in knowledge, attitude, skill and behavior. Empowerment of FFS member was measured based on eight variables with five scale values of 5, 4, 3, 2, 1 as highly satisfied, satisfied, fairly satisfied, just satisfied and not satisfied.

The data from the Table 4 revealed that out of eight statements related to FFS member's empowerment after joining FFS three statements were significantly different among the FFS members. The difference in 'I have developed my skills in facilitating FFS might be due to the more group activity in FTTFFS to learn about the skills in facilitating FFS.

	Statements related to FFS member's empowerment after joining FFS	FTTFFS (n_1=145) Mean	IPMTTFFS (n_2=161) Mean	Z values
1.	I have got required information about importance and functioning of FFS.	162.17	145.70	1.683
2.	I have developed my skills in facilitating FFS.	173.69	135.32	-3.929*
3.	I have got social status in my community.	130.92	173.84	-4.397*
4.	I have developed leadership qualities.	157.19	150.18	-0.713
5.	I have increased my self confidence in IPM practice.	149.42	157.17	-0.807
6.	Increase in my decision making power	149.30	157.28	-0.815
7.	I got effective extension services in agriculture	116.70	186.64	-8.666*
8.	I am motivated for collective action	155.96	151.29	-0.489

**Significant at 0.05 level*

Source: Field Survey

Table 4: Comparing the differences in FFS member's empowerment

Similarly the difference in 'I got effective extension services in agriculture' indicated the effective extension services were received from IPM trainer than that of farmer trainer. It might be due to the fact that IPM trainers have substantial higher degree of education and expertise in extension services. The difference in 'I have got social status in my community' was only due to the feeling of the members of IPMTTFFS that presence of government official as a trainer, their prestige in society has increased than that of farmer trainer.

FFS GROUP EMPOWERMENT

Group empowerment is related to the internal FFS environment when FFS members collectively organize activities that benefit all members of the FFS. Group empowerment was measured based on seven variables with five scale values of 5, 4, 3, 2, 1 as very good, good, fair, poor and very poor.

	Statements related to internal FFS environment	FTTFFS (n_1=145) Mean	IPMTTFFS (n_2=161) Mean	Z values
1.	Members knowing each other.	157.23	150.14	-0.777
2.	Respecting other's ideas.	162.96	144.98	-1.928
3.	Sharing of information among FFS group members.	189.79	120.82	-6.997*
4.	Mutual support among FFS members.	177.91	131.52	-4.764*
5.	Atmosphere that promotes consensus in decision making.	201.21	110.53	-9.272*
6.	Eager towards collective action.	175.82	133.39	-4.521*
7.	Risk sharing ability in making risky decisions.	201.93	109.88	-9.612*

**Significant at 0.05 level*

Source: Field Survey

Table 5: Comparing differences in FFS group empowerment

The data from the Table-5 revealed that out of seven statements related to internal FFS environment five statements were significantly different among the FFS members. The differences in all those statements indicated the good internal environment in FTTFFS. More empowered FTTFFS group could be institutionalized because it could provide more IPM trainings at community level. Highest mean score (201.93) of 'risk sharing ability in making risky decisions' indicated the more effective performance of FTTFFS.

MANAGERIAL ABILITY

Managerial ability of FFS is the process of designing and maintaining an environment in which members working together in groups and efficiently conduct IPM trainings. Managerial ability of FFS was measured in terms of perceptions of the respondents related to management, norms and rules maintained in FFS.

Management of FFS was measured in terms of its record, guidelines, and group mobilizing skill, ledger keeping and transparency maintained with five scale values of 5, 4, 3, 2, and 1 as very good, good, fair, poor and very poor.

	Statements related to the management of FFS	FTTFFS (n_1=145) Mean	IPMTTFFS (n_2=161) Mean	Z values
1.	Record maintained by FFS	192.78	118.12	-8.066*
2.	Directives and guidelines getting from	199.50	112.07	-8.962*

-	management committee.			
3.	Group mobilizing skill for facilitating FFS received by you.	184.20	125.85	-5.894*
4.	Ledger keeping and transparency in your FFS.	201.61	110.17	-9.456*

**Significant at 0.05 level*
Source: Field Survey

Table 6: Statements related to the management of FFS

The data from the Table 6 revealed that all the statements related to the management of FFS were significantly different among the FFS members. The differences in all those statements indicated the good management capacity of FTTFFS than that of IPMTTFFS. It might be due to the perception of the respondents that FFS as an institution managed by their own community. FTTFFSs have the potential to provide more IPM trainings continuously at community level because they were well managed than IPMTTFFS.

Record keeping, group mobilizing skill, directives, guidelines, ledger keeping and transparency in FTTFFS were found better than that of IPMTTFFS.

Norms and rules are the expectations in FFS by which a FFS group guides the behavior of its members. Norms and rules in FFS were measured in terms of its effectiveness based on six variables with three scale values of 3, 2, and 1 as very effective, effective and less effective.

Statements related to the norms and rules maintained in FFS	FTTFFS (n1=145) Mean	IPMTTFFS (n2=161) Mean	Z values
1.Meeting of the members of FFS	229.65	84.92	-15.839*
2.Role and responsibility of FFS members	211.51	101.25	-12.394*
3.Reward and punishment for FFS members	159.05	148.50	-3.382*
4.Contact/communication with experts, JT/JTAs by the FFS member	154.95	152.20	-0.336
5.Role and responsibility of FFS facilitator	143.21	162.77	-3.305*
6. Contact/communication with experts, JT/ JTAs by the FFS facilitator.	150.74	155.98	-0.707

Source: Field Survey
**Significant at 0.05 level*

Table 7: Statements related to the norms and rules maintained in FFS

The data from the Table-7 revealed that out of six statements related to the norms and rules maintained in FFS, four statements were significantly different among the FFS members. The differences might be due to more effective meeting, role, responsibility, reward and punishment of FTTFFS member than that of IPMTTFFS members. Role and responsibility of FFS facilitator was observed less in FTTFFS than IPMTTFFS. It might be due to the differentiated group tasks in FTTFFS.

BUDGET

Budget is a financial statement prepared and approved prior to a defined period of time or policy to be proceed during the period for the purpose of attaining a given objective. FFS member's preference towards budget was measured by asking their perceptions for the best source they like most.

Best source of budget preferred by the respondents	Type of FFS respondents FTTFFS(n_1=145)	IPMTTFFS(n_2=161)	Total
DADO	82 (56.6)	106 (65.8)	188 (61.4)
VDC/ municipality	63 (43.4)	55 (34.2)	118 (38.6)
Total	145 (100.0)	161 (100.0)	306 (100.0)

2 (tab) =3.84 > χ 2 (cal)=2.777 b (p=0.096), df =1, phi=-0.095, contingency coefficient=0.095, uncertainty coefficient=0.007
b = non significant at 5% level of significance
Source: Field Survey
(Figures in parenthesis are percentage of frequency)

Table 8: Frequency of the respondents preferring the best source of budget

The above Table 8 showed that majority of the respondents (61.4 %) referred DADO as the best source of fund. It might be due to the fact that DADO as a trusted governmental institution could assure the budget regularly so that FFS could sustain in their locality.

There was no significant relationship of type of FFS respondent with their preference for budgeting was observed. But large majority of the respondent (61.4 %) preferred DADO as a best source of budget. It might be due to the fact that DADO could provide technical suggestions in preparing curriculum, training materials, demonstration plot and, Training of Trainers (TOT) for FFS graduates also the political support might be needed to withdraw the budget from VDC/Municipality.

CURRICULUM DEVELOPMENT, PHYSICAL FACILITIES AND TRAINING MATERIALS

Curriculum development in FFS is done generally based on the local needs of the farmers. FFS member's perception towards the development of curriculum was measured in terms of agreement based on five variables with five scale values of 5, 4, 3, 2 and 1 as strongly agree, agree, undecided, disagree and strongly disagree.

Statements related to the curriculum development	FTTFFS (n_1=145) Mean	IPMTTFFS (n_2=161) Mean	Z values
1.The contents of the FFS training were appropriately developed for the competency required for facilitator	174.69	134.42	-4.133*
2. The contents were highly relevant to the context (field situation)	155.61	151.60	-0.438

3. The course contents of FFS correspond closely to the concept of FFS.	170.51	138.18	3.541*
4. The curriculum of FFS should be made on the basis of local needs.	122.64	181.29	-7.419*
5. The curriculum of FFS should cover the subjects related to institutional development of FFS.	131.91	172.95	-4.250*

**Significant at 0.05 level*
Source: Field Survey

Table 9: Statements related to the curriculum development in FFS

The data from the Table 9 revealed that four statements related to curriculum development were significantly different among the FFS members. Higher mean score (174.69) of the statement 'contents of the FFS training were appropriately developed for the competency required for facilitator' indicated the more contents related to the competency required for facilitator was included in FTTFFS. Higher mean score (181.29) of the statement 'curriculum of FFS should be made on the basis of local needs' indicated the low priority to the local needs of farmers in IPMTTFFS than that of FTTFFS. The study also showed that all the respondents responded that the curriculum of FFS was provided by DADO only.

Physical facilities and training materials in FFS helps to conduct the IPM training effectively and efficiently. The entire respondent responded that their FFSs could contribute common demonstration plot and a room for training anywhere in their community. Availability of Physical facilities and training equipments required to train farmers found to be absent in all the 12 FFSs. Similarly training materials found to be present in farmer trainer trained FFSs. Poster, chalk, marker pen, dusters, black/white boards, booklets, leaflets, herbal pesticides, and repellent plants were kept inside the house of the members of FFS.

IV. CONCLUSIONS

Farmer trainer trained FFSs were institutionalized more than IPMTTFFSs at community level. These differences were clearly reflected while comparing IPMTTFFS and FTTFFS in terms of formalization, empowerment of FFS members; FFS group empowerment, budget, physical resource, managerial ability, curriculum development, and training material. Those differences were caused by age and education category of the respondents. Selection of the younger and higher educated participant should be encouraged for institutional development of FFS at community level.

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REFERENCES

[1] Bhattarai, A., & GC, Y. (2015). Effectiveness of farmer field school (FFS) program in adoption of IPM Technology in Chitwan District, Nepal. Agr Develop J, 11, 1-12.
[2] Dzeco, C., Amilai, C., & Cristóvão, A. (2010). Farm field schools and farmers' empowerment in Mozambique: A pilot study. Journal of Extension Systems, 26(2), 1.
[3] Fredrix, M. (2014). Farmer Field Schools And Farmer Empowerment. International Journal of Agricultural Extension, 67-73.
[4] Kafle, L., Dhoj, Y. G. C., Yang, J. T., Bhattarai, S., Tiwari, S., & Katuwal, M. (2014). Integrated Pest Management in Nepal. Available: https://www.researchgate.net/profile/Lekhnath_Kafle/publication /269333256_Integrated _Pest
[5] _Management_in_Nepal/links/5486efe90cf2ef34478e9323.pdf. [Access date: 25th November, 2017].
[6] Mahboubeh, B., & Ali, J. S. (2015). The Effect of IPM/FFS Educational Approach on Local Communities Capabilities to Protect the Environment, Case Study: Fereidoonkenar Mazandaran. Bull. Env. Pharmacol. Life Sci., 4, 44-50.
[7] Soniia David & Christopher Asamoah (2011): The Impact of Farmer Field Schools on Human and Social Capital: A Case Study from Ghana, The Journal of Agricultural Education and Extension, 17:3, 239-252.
[8] Tiwari, S., Thapa, R. B., & Ghimire, R. (2008). Farmers' field school in potato: an effective tool for integrated pest management. J. Plant Protec. Soci, 1, 115-121.