

Agricultural Information Receipt, Application and Dissemination Behavior of FFS-IPM Club Farmers

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Abstract

The study was conducted to determine agricultural information receipt, application and dissemination behavior of farmer field school (FFS) farmers and to explore relationship between the selected characteristics of the farmers with their agricultural information receipt, application and dissemination behavior. Data were collected through personal interview from 100 FFS farmers of the five FFS-IPM clubs in Ujalkur union of Rampal upazila under Bagerhat district of Bangladesh during March to May 2014. Majority (65%) of the farmers had received medium level of agricultural information followed by high (32%) and low (3%). In case of farmers' behavior towards agricultural information application, majority (55%) of them had medium level of application, while 44 percent had low and only 1 percent had higher level of application and in case of agricultural information dissemination, all the farmers (100%) showed low level of dissemination behavior. Ridge cropping and their management obtained most priority in case of agricultural information receipt and application behavior which indicate that they would like to practice ridge cropping as an important sub-cropping system. On the other hand, management practice of brinjal shoot and fruit borer (BSFB) gained main concern in case of agricultural information dissemination. Agricultural knowledge, cosmopolitaness, extension media contact, and training experience of the FFS farmers showed positive significant relationship with their agricultural information receipt, application and dissemination behavior and educational level showed positive significant relationship with agricultural information receipt and application behavior while organizational participation showed significant positive relationship with agricultural information dissemination behavior. Therefore, it can be concluded that the role of FFS-IPM club farmers was effective to some extent in case of agricultural information receipt and application while it was less effective in case of agricultural information dissemination.

Key words: *Information, receipt, application, dissemination behavior*

Introduction

The Farmer Field School is a group-based learning process where a group of farmers get together in one of their own fields and learn how to farm better by observing, analyzing and trying out new ideas. Unlike traditional approaches to agricultural extension, which rely on extension workers providing advice to farmers, farmer field schools enable groups of farmers to find out

the answers for themselves. That means the farmers can find solutions to their own problems. Farmer Field School (FFS) is a very popular extension and educational approach worldwide. About 78 countries are implementing this approach (Braun et al., 2006), although in different forms and with varying focus depending on the national context. FFS is described as a

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Platform and "School without walls" for improving decision making capacity of farming communities and stimulating local innovation for sustainable agriculture. It is a participatory extension approach of learning, technology development and dissemination based on adult learning principles such as experimental learning whereby the farmers are given favorable environment of being experts and decision makers in their own farms. It consists of a group of people with common interests. The group may be mixed with men and women together, or separated depending on culture and topic (Gallagher, 2003). Typically FFS consists of 20 farmers meeting weekly with facilitators throughout the cropping season. After the completion of FFS training session, the farmers continue to meet and share information with minimum contact with extension personnel. FFSs were designed and managed by the Food and Agriculture Organization (FAO) for training rice farmers on integrated pest management in Indonesia in 1989. In Bangladesh, the method was first used in the early 1990's funded by UNDP. Department of Agricultural Extension is currently running a five-year programme to organize 8000 FFSs for Integrated Crop Management

(ICM) with financial and technical support from DANIDA. FFS approach gives the opportunity to undertake the farmer's ability to identify, analyze and make decision about the farming problems. Actually this approach helps farmers to develop their critical analytical skill which improve the learner's ability to make their better decisions. It is also demanded that the member farmer of FFS-IPM club should play an effective role in agricultural information receive, application and dissemination what they received from the training of club members. However, until now no systematic studies have been reported in Bangladesh in this regard. Considering the above facts, the present study was undertaken to achieve the following objectives; i) to analyze the selected characteristics of the FFS farmers, ii) to determine agricultural information receipt, application and dissemination behavior of the FFS farmers, iii) to identify specific cropping/sub-cropping system of the study area and iv) to explore relationship between the selected characteristics of the FFS farmers with their agricultural information receipt, application and dissemination behavior.

Methodology

The study was conducted in five FFS-IPM clubs namely Vorosapur IPM club, Ramdevpur IPM club, Ronsen IPM club, Jhalbari IPM club, and Gobindopur IPM club of Ujalkur union under Rampal upazila of Bagerhat district of Bangladesh. There were 20 members in each of the FFS-IPM clubs. Thus the population of this study included 200 farmers in the selected 10 FFS-IPM clubs. Out of 10 FFS-IPM clubs 5 clubs were selected randomly. Hence, the sample size stood 100. At first, six informal

group discussion sessions were arranged in December 2013, each group contained 5-10 participants. In these sessions, the researchers discussed with the respondents about the policy of FFS-IPM club, technologies, training provided from FFS-IPM club by the technical personnel of Upazila (sub-district) agriculture office, benefits and problems associated with FFS-IPM club. Based on this information, necessary items were incorporated in the interview schedule which was finally used

for conducting interviews with 100 respondents. Farmers were asked to furnish information about personal profile e.g. age, farming experience, educational level, family size, farm size, annual income, agricultural knowledge, cosmopolitaness, organizational participation, extension media contact and training experience.

To measure the agricultural information receipt, application, and dissemination behavior of FFS farmers twenty (20) items were incorporated in the interview schedule. A five (5) points rating scales viz. not at all, little, some, high, and very high were employed against each of the twenty (20) items and a score of 0, 1, 2, 3, and 4 were assigned against the items respectively. The agricultural information receipt, application, and dissemination score of the respondents were determined by adding the scores obtained by the respondents against twenty (20) items. Thus, the agricultural information receipt, application, and dissemination score of the respondents could range from 0-80. Based on the obtained score, the respondents were classified into following three categories as presented in Table 1.

Table 1 Categories of the respondents according to their obtained score

Categories	Score range
Low	Up to 30
Medium	31-50
High	>50

Thus, the primary data collection took place between March to May 2014 through group discussion and face-to-face interviews. Some relevant literature and empirical findings were also collected and reviewed from various secondary sources to support and supplement the results of this study. Last of all, collected data were edited and complied in order to make suitable for analysis. Statistical treatments, such as percent, mean, standard deviation (SD), frequency, range was done. The Pearson's Product Moment Co-efficient of Correlation was computed to explore the relationships of the selected factors of the study. using SPSS (Statistical Package for Social Sciences) software package (16.0 versions). Besides five percent and one percent level of probability were used in the present study.

Results and Discussion

Personal profile of the respondent farmers: Data presented in Table 2 reveal that substantial portion (38%) of the farmers were middle aged group while 36 percent and 26 percent respondents fell in the young and old aged category respectively with an average of 42.71 years. About one-third (72%) of the respondents had low farming experience while 25 percent had medium and the rest 3 percent had high farming experience with an average being 17.41 years while the farming experience ranged from 2 to 50 years. Majority of the

respondents (61%) had secondary level of education followed by higher secondary level (19%). A few (13%) of them had primary education and 7 percent had above secondary level with 0 (zero) percent of illiterate. However, average literacy of the respondents was above primary level (9.24). Most of the farmers (92%) maintained small sized family compare to large sized (5%) while only 3 percent respondents had medium family size. However, the average family size was 3.85. The farm size score ranged from 0.047 to 11.356 hectares with

the average being 1.145 hectare. Among the respondents 28 percent were marginal farmers while 26 percent, 19 percent, 16 percent, and 11 percent had medium, small, large and landless farmers respectively. Respondents' annual income ranged from taka. 51 to 1,785 thousand with an average of taka 236 thousands. Majority of the respondents (59%) were in low income category followed by medium (26%) and high (15%) income generating groups. Agricultural knowledge score of the respondents ranged from 20 to 38 with an average of 32.23. Majority (72%) of the respondents had medium level of farming knowledge compared to 21 percent (high) and 7 percent (low) levels of agricultural knowledge. Above three-fifth (61%) of the respondents had low level of cosmopoliteness compared to 34 percent

(medium), 3 percent (no) and 2 percent (high) had level of cosmopoliteness. Majority (67%) of the respondents had low organizational participation with 25 percent of no organizational participation and the rest 6 percent and 2 percent had medium and high organizational participation. Three-fifths of the respondents (63%) had low extension contact followed by medium (32%) and high (5%) extension contact. Results also indicated that the training exposure score of the respondents ranged from 1 to 5. Among the respondents majority (67%) had medium training experience in different agricultural issues with 29 percent had low training experience. However, only 4 percent of the respondents had high training exposure with the average of 3.02.

Table 2 Distribution of the respondents on the basis of selected characteristics

Characteristics	Scoring method	Categories	Percent (n=100)	Range	Mean	SD
Age	years	Young (up to 35) Middle aged (36-50) Old (>50)	36.0 38.0 26.0	23-75	42.71	12.11
Farming experience	years of farming	Low (up to 20) Medium (21-40) High (>40)	72.0 25.0 3.0	2-50		10.11
Educational level	years of schooling	Primary (1-5) Secondary (6-10) Higher secondary (11-12) Above higher secondary (>12)	13.0 61.0 19.0 7.0	2-16	9.24	2.75
Family size	No. of persons	Small size (up to 4) Medium size (5-6) Large size(>6)	92.0 3.0 5.0	2-8	3.85	1.27
Farm size	hectare	Landless (0.001-0.200) Marginal (0.201-0.500) Small (0.501-1.000) Medium (1.001-2.000) Large (>2)	11.0 28.0 19.0 26.0 16.0	0.047-11.356	1.145	1.39
Annual income	'000' taka	Low (up to 200) Medium (201-400) High (>400)	59.0 26.0 15.0	51.77-1785	236.53	230.89

Table 2 (Contd.)

Characteristics	Scoring method	Categories	Percent (n=100)	Range	Mean	SD
Agricultural knowledge	marks	Low (up to 25) Medium (26-35) High (>35)	7.0 72.0 21.0	20-38	32.23	3.74
Cosmopolitaness	Score	No (0) Low (1-8) Medium (9-16) High (>16)	3.0 61.0 34.0 2.0	1-19	6.93	3.75
Organizational participation	Score	No participation (0) Low participation (1-3) Medium participation (4-6) High participation (>6)	25.0 67.0 6.0 2.0	0-11	1.44	1.68
Extension media contact	Score	Low (1-13) Medium (14-26) High (>26)	63.0 32.0 5.0	0-33	12.66	7.08
Training experience	No. of training	Low experience (1-2) Medium experience (3-4) High experience (>4)	29.0 67.0 4.0	1-5	3.02	0.96

Farmers behavior towards agricultural information receive, application and dissemination: Data contained in Table 3 state that the information receiving score of the farmers ranged from 25 to 66 with the mean of 46.31. The majority of the farmers

(65%) had received medium amount of information followed by high (32%) and low (3%). However, 97 percent of the farmers had received medium to high amount of information obtained from upazila agricultural officials.

Table 3 Distribution of the respondents according to their agricultural information receive, application and dissemination score

Variables	Categories and score range	Percentage (n=100)	Range	Mean	SD
Agricultural information receive	Low (up to 30) Medium (31-50) High (>50)	3.0 65.0 32.0	25-66	46.31	8.58
Agricultural information application	Low (up to 30) Medium (31-50) High (>50)	44.0 55.0 1.0	17-52	32.30	7.37
Agricultural information dissemination	Low (up to 30) Medium (31-50) High (>50)	100.0 0.0 0.0	1-10	3.11	1.72

The information application score of the respondents ranged from 17 to 52 with the mean and standard deviation being 32.30 and 3.372 respectively. Majority (55%) of

the farmers had medium level application of the received information while 44% had low and only 1% had higher level of application. Therefore, more than half

(56%) had medium to high level application of information.

The information dissemination score of the farmers ranged from 1 to 10 with the mean and standard deviation being 3.11 and 1.717 respectively. All the farmers (100%) had low level of dissemination behavior of agricultural information.

Overall behavior regarding agricultural information receipt, application and dissemination: Data in Figure 1 show that

the mean values of agricultural information receive, application and dissemination were 46.31, 32.30, and 3.11 respectively which indicate that the respondent FFS farmers did not show similar behavioral pattern in case of agricultural information receipt, application and dissemination. Therefore, a downward trend was found in case of agricultural information receipt, application and dissemination behavior.

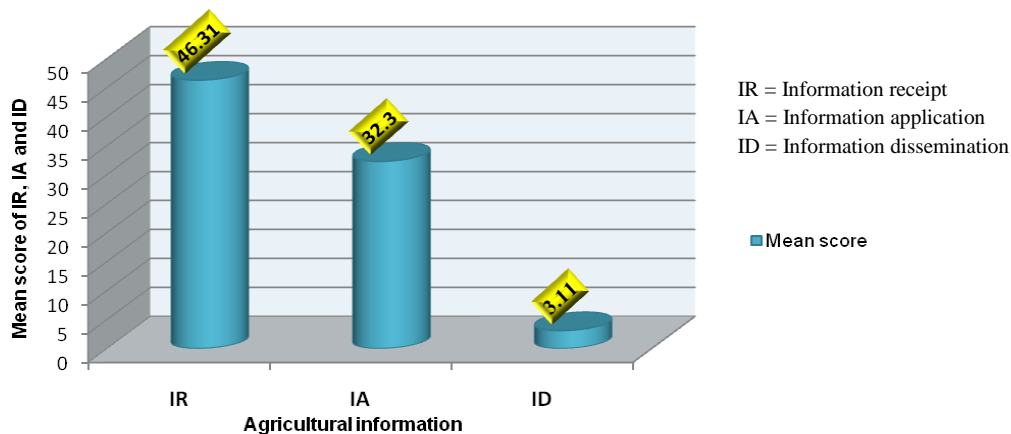


Figure 1 Overall behavior pattern of FFS farmers in relation to agricultural information receive, application and dissemination

Rank order or priority in receiving, applying and disseminating agricultural information by the farmers: Data presented in Table 4 indicate that among twenty (20) agricultural practices, ridge cropping and their management obtained most priority both in agricultural

information receive and application (scoring 347 and 256 respectively). On the other hand, management practice of brinjal shoot and fruit borer (BSFB) gained 1st priority in case of agricultural information dissemination (scoring 60).

Table 4 Rank order of agricultural information receipt, application and dissemination index

SL No.	Related actions	Information receive		Information application		Information dissemination	
		IRI	Rank	IAI	Rank	IDI	Rank
1	Seed related	286	4 th	233	5 th	16	7 th
2	Soil fertility	266	9 th	198	11 th	3	15 th
3	Preparation of seedbed	276	6 th	215	9 th	4	14 th
4	Ridge cropping and their management	347	1 st	256	1 st	36	4 th
5	Fertilizer management	281	5 th	247	2 nd	14	8 th
6	Water management for pest control	153	19 th	76	18 th	16	7 th
7	Influence of fertilizer on insect and pest	177	16 th	92	15 th	10	10 th
8	Influence of planting distance on insect and pest	186	15 th	127	14 th	19	5 th
9	Disease management	270	8 th	243	3 rd	16	7 th
10	Use of bio-pesticide	217	13 th	82	16 th	7	12 th
11	Chemical pesticide, its negative impact, and safety use	286	4 th	242	4 th	40	2 nd
12	Crop rotation	198	14 th	80	17 th	6	13 th
13	Use of granular urea	308	2 nd	214	10 th	37	3 rd
14	Brinjal shoot and fruit borer management	264	11 th	227	6 th	60	1 st
15	Stem borers management in rice	244	12 th	148	13 th	1	16 th
16	Rice hispa management	271	7 th	217	8 th	3	15 th
17	Leaf folder management in rice	265	10 th	222	7 th	9	11 th
18	Brown plant hopper management in rice	169	17 th	80	17 th	13	9 th
19	Rice bug management	167	18 th	31	19 th	1	16 th
20	Rat management	303	3 rd	174	12 th	18	6 th

IRI = Information receipt index, IAI = Information application index, IDI = Information dissemination index

Relationship between the selected characteristics of the FFS farmers and their agricultural information receipt, application and dissemination behavior: Relationships of eleven selected characteristics (age, farming experience, educational level, family size, farm size,

annual income, agricultural knowledge, cosmopolitaness, organizational participation, extension media contact and training experience) of the FFS farmers with their information receipt, application, and dissemination behavior have been shown in Table 5.

Table 5 Correlation co-efficient showing relationship between selected characteristics of the farmers and the focus variables

(Characteristics of the respondents)	Focus variables		
	Information receipt (IR)	Information application (IA)	Information dissemination (ID)
	Value of “r ₁ ”	Value of “r ₂ ”	Value of “r ₃ ”
Age	0.111	0.114	0.001
Farming experience	0.065	0.095	0.110
Educational level	0.226*	0.198*	0.167
Family size	0.151	0.145	0.100
Farm size	0.066	0.074	0.197*
Annual income	0.010	0.055	0.079
Agricultural knowledge	0.561**	0.633**	0.361**
Cosmopolitaness	0.344**	0.440**	0.204*
Organizational participation	0.170	0.156	0.232*
Extension media contact	0.506**	0.552**	0.433**
Training experience	0.475**	0.521**	0.218*

** Significant at 0.01 level of probability, * Significant at 0.05 level of probability, NS: Non-significant at 0.05 level of probability

Data presented in Table 5 show a positive but non-significant relationship between the age of the respondents and their agricultural information receipt, application and dissemination behavior. Studies of Ahmed (2007), Hossain (2010) also showed non-significant relationships. A non-significant positive relationship was observed between the farmers' farming experience and their agricultural information receipt, application and dissemination behavior (Table 5). Similar relationship was observed by Basak and Pandit (2011) between farming experience and the Farmers' attitude towards the use of USG in rice cultivation. There exists a non-significant positive relationship between family size of the FFS farmers and their agricultural information receipt, application and dissemination behavior. Similar relationship was also observed by Bhuiyan *et al.* (2013) between family size and the farmers' attitude in poultry farming. A positive significant relationship was observed between the agricultural knowledge of the respondents

and their agricultural information receipt, application and dissemination behavior. Nurzaman (2000) also observed that agricultural knowledge of the FFS and non-FFS farmers were positively related with their attitude on IPM. There exists a positive significant relationship between the extension media contact of the respondents and their agricultural information receipt, application and dissemination behavior. Similar relationship was observed by Bhuiyan *et al.* (2013) between communication exposure and the Farmers' attitudes in poultry farming. A positive significant relationship was observed between the training experience of the respondents and their agricultural information receipt, application and dissemination behavior. Similar observation was also reported by Habib (2000).

It was revealed that among the eleven selected characteristics; agricultural knowledge, cosmopolitaness, extension media contact, and training experience showed positive significant relationship

with their agricultural information receipt, application and dissemination behavior. On the other hand, educational level showed positive significant relationship with agricultural information receipt, application

behavior while only organizational participation showed significant positive relationship with agricultural information dissemination behavior.

Conclusion and Recommendations

From the findings of the study it can be concluded that majority of the respondent farmers were interested in receiving agricultural information as well as to apply them to some extent but they were less interested to disseminate those among others. Findings also revealed that the farmers of the study area followed a specific sub-cropping system i.e. ridge cropping. Further it can be noted that the more was the agricultural knowledge, cosmopolitaness, extension media contact, and training experience of the farmers, the more was the farmers' behavior towards agricultural information receive, application and dissemination.

Based on the findings of the study, it can be recommended that i) DAE should reconsider its technology transfer strategies as the farmers are not playing proper role in technology transfer, ii) Motivational campaign should be launched for the farmers to increase their information dissemination role, iii) Similar research should be undertaken in other parts of the country to comprehend idea about the behavior of technology transfer through farmers and iv) More parameters could be included to test the relationship with agricultural information receiving, applying and disseminating behavior of the farmers which ultimately help DAE to identify the potential farmers for technology transfer.

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