

ENVIRONMENTAL AWARENESS OF THE FFS FARMERS IN PRACTICING IPM

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ABSTRACT

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The study was conducted at Bancharampur upazila under Brahmarbaria district to determine and describe the environmental awareness of the farmers' of Farmer Field School (FFS) in practicing integrated pest management (IPM) during September 15 to October 30, 2006. The study also explored the relationship between the selected characteristics of the FFS farmers' and their overall environmental awareness. The selected characteristics included in the structured questionnaire for study were age, literacy, family size, farm size, annual income, contact with change agent, organizational participation, cosmopolitanism, knowledge about IPM and agricultural knowledge. Data were collected from a sample of randomly selected 120 FFS farmers. In respect of environmental awareness, the findings revealed that the highest proportion (76.67 %) of the respondents had medium to high awareness while only 23.33 % of them had low awareness. The literacy and knowledge of the farmers about IPM and agricultural knowledge had significant positive correlation with their environmental awareness. Rest of the variables had no significant relationship with their environmental awareness.

Key words: Environmental awareness, FFS farmers, IPM practice

INTRODUCTION

Agro-chemicals played a vital role in increasing productivity, but its use is now considered hazardous for our ecosystem. In fact, the scale and non-judicious use of agro-chemicals for a long period has been damaging for our natural resources such as land, fishes, beneficial insects, soil microbes, etc. The environment problems of developing countries are largely due to over exploitation of lands and now-days this is an issue of multidimensional and international nature. Increased use of pesticides and artificial fertilizers is also causing environmental problems. Farmers are the ultimate users of agro-chemicals to control their crop pests. Bangladesh is no exception of this general trend of environmental degradation. Agriculture and environment has a close relationship and interacts with each other in such a way that the health of agriculture depends on the proper functioning of environmental process (Conway, 1990). It has been found in different countries of the world that in addition to beneficial effect, the improved agricultural practices have tremendous influence on environmental population and Bangladesh is not exception to this (Sattar, 1994). So it is necessary to know the awareness and overall knowledge of the farmers about Integrated Pest Management (IPM) as well as environmental pollution.

Integrated Pest Management (IPM) is an appropriate package of technology for pest management, which is most economical and less hazardous to the environment. As most of the farmers of Bangladesh are poor, they could hardly spare the money for expensive toxic pesticides. IPM educates the farmers to utilize the ready available sources of biological control agents, tolerant genetic resources, modern cultivation practice and mechanical means of control. Above all, IPM has ample scope of making less reliant on chemical control. Through imparting practical IPM field training, the FFS farmers become aware of the harmful effect of pesticides used.

IPM was started from 1981 through simple demonstration at field level and became popular during the second phase on the FAO's inter-country program in 1989. Farmers who were trained under this program were able to reduce their pesticide use substantially. However, in order to receive such benefits and to see a significant positive impact of IPM in Bangladesh, a large number of farmers need to be trained on IPM.

Already with the lurching of UNDP funded National IPM program, DANIDA's strengthening of plant protection services (SPPS), CARE's "NOPEST" and INTERFISH project, ADB's command area project, FAO's inter-country vegetable IPM program and the involvement of a number of other NGO's in IPM activities are running to ponder over this concept and give sufficient thought for its application. So, it is necessary to know about the environment awareness and problem concept of IPM, if applied properly, can reduce the quantity of pesticide of Bangladesh. This will save foreign exchange, reduce farmers production cost and above all, lessen threats on environment. In order to give proper direction to study the following objectives were formulated-

- 1) To determine and describe some selected characteristics of the FFS farmers.
- 2) To determine the environment awareness of the FFS farmers.

3) To explore the relationship between selected characteristics of the FFS farmers and their environmental awareness in practicing IPM.

MATERIALS AND METHODS

The study was conducted in Bancharampur upazila under Brahmarbaria district. Six Farmers Field School (FFS) were randomly selected in 6 respective village such as Bancharampur, kadamtali, Saifullkandi, khalla, Bancharampur, Ujanchar, A total of 120 FFS farmers were selected at random by taking 20 from each of the 6 Farmers Field School. Data were collected during September 15 to October 30, 2006. The independent variables of this study were age, literacy, family size, farm size, annual income, contract with change agent, cosmopolitaness, organizational participation, knowledge about IPM and agricultural know ledge. All these variables were measured by computing appropriate score and variance statistical measures such as range, mean, percentage, standard deviation. Co-efficient of correlation was also computed to explore the relationship between selected characteristics and their environmental awareness in practicing IPM. Five percent (0.05) and one percent (0.01) level of probability were used to reject any null hypothesis.

RESULTS AND DISCUSSION

Selected characteristics of the FFS farmers

Table 1 indicates that the highest proportion 60.83 percent of the FFS farmers belonged to the young group, while 32.84 percent and 3.33 percent were middle and old aged category. However, the data also revealed that 96.67 percent of the farmers in the study area were young to middle aged category.

Various agricultural organizations those are involved in the transfer of new technology have given emphasis in choosing young to middle aged farmers. Because more or less of them were involved in cultivation and younger people are comparatively more energetic, prompt, enthusiastic and innovative than the older people in our country.

Data furnished in Table 1 indicate that the highest proportion (44.17%) of the farmers were primary education whereas 18.33 percent were secondary education, 5.00 percent above secondary, 16.67 percent can sign only and 15.83 percent illiterate. Majority (67.5 %) of the farmers was found literate from primary to above secondary level but only 9.17 percent respondents had large family. Data also indicate that the average family size (4.84) of the farmers in the study area was lower than the national average of 5.6 (BBS, 2005).

Table 1 show that the highest proportion (40.00 %) of the farmers belonged to large farm holding group compared to 38.33 and 21.67 percent with small and medium farm holders respectively. The average farm size of the farmers was 0.66 hectares, i.e., smaller than national average (0.81 hectares) (BBS, 2005). The highest proportion (48.33%) of the farmers had medium family income, while 19.17 percent and 32.50 percent had low and high income respectively. As a result, the majority proportion (80.83 percent) of the FFS farmers family in the study area constitute medium to high income categories (Table1).

Table 1. Salient features of the farmer's selected characteristics and their environmental awareness

Selected characteristics	Scoring method	Possible range of score	Observed range of score	Categories	Farmers (n=120)		Mean	SD
					No.	%		
Age	No. of years	-	15-54	Young (15-35)	73	60.83	32.06	10.28
				Meddle aged 36-50	43	5.84		
				Old above 50	4	3.33		
Literacy	Years of schooling	-	0-12	Illiterate 0	19	15.83	3.24	3.27
				Can sign only 0.5	20	16.67		
				Primary education 1 to 5	53	44.17		
				Secondary education 6 to 10	22	18.33		
				Above Secondary education >10	9	5.00		
Family size	No. of members	-	2-9	Small family 2-4	55	45.83	4.84	1.74
				medium family 5-7	54	45.00		
				large family above 10	11	9.17		
Farm size	Size in hectares	-	0.2-1.75	Small farm 0.20-0.49	46	38.33	0.66	0.32
				medium farm 0.50-0.79	26	21.67		
				large farm above 0.79	48	40.00		
Annual income	In Tk. (1000)	-	20-70	Low income up to 35	23	19.17	44.70	11.90
				medium income 36-50	58	48.33		
				high income above 50	39	32.50		
Contact with change agent	Scaling	0-57	17-40	low contact 17-24	47	39.17	27.29	6.62
				medium contact 25-30	31	25.83		
				high contact above 30	42	35.00		
Cosmopolitaness	Scaling	0-24	10-22	low cosmopolitaness 10-15	79	65.83	15.26	10.34
				medium cosmopolitaness 16-20	37	30.83		
				high cosmopolitaness > 20	4	3.34		
Organizational participation	Scaling	-	4-40	low participation 4-14 medium	58	48.33	16.59	9.95
				participation 15-25 high	41	36.67		
				participation above 25	18	15.00		
Knowledge about IPM	Scaling	0-50	19-40	low IPM knowledge below 20	2	1.67	24.87	5.68
				medium IPM knowledge 20-25	86	71.67		
				high knowledge above 25	32	26.66		
Agricultural knowledge	Scaling	0-50	24-43	low knowledge below 20	26	21.67	29.74	4.63
				medium knowledge 20-25	61	50.83		
				high knowledge above 25	33	27.50		
Environmental awareness	Scaling	0-15	8-15	low awareness up to 8	28	23.35	9.99	1.67
				medium awareness 9-10	57	47.50		
				high awareness above 10	35	29.17		

Data presented in Table 1 describe that 35 percent of the farmers had high contact with change agents while 25.83 % and 39.17% had medium and low contact with the change agents respectively. About 31 percent of the farmers had medium cosmopolitaness compared to 65.83 percent low cosmopolitaness and only 3.34 percent high cosmopolitaness. Data also reveal that majority (96.66 percent) of the farmers was under medium to low cosmopolitaness group. On the other hand 85 percent of the farmers had low to medium organizational participation and only 15 percent of the farmers had high participation in the organization. The highest proportion (98.33 percent) of the farmers were medium to high knowledge about IPM and only 1.67 percent of them low knowledge about IPM (Table 1). From the Table 1 it may be concluded that the highest proportion (78.33 percent) of the farmers had medium to high agricultural knowledge.

Environmental awareness of the FFS farmers

The environmental awareness scores on the basis of practicing IPM of FFS farmers ranged from 8 to 15 with an average 9.99. Figure 1 reveals that 47.50% of the respondents had medium environmental awareness while 29.17% and 23.33% of the respondents had high and low environmental awareness respectively.

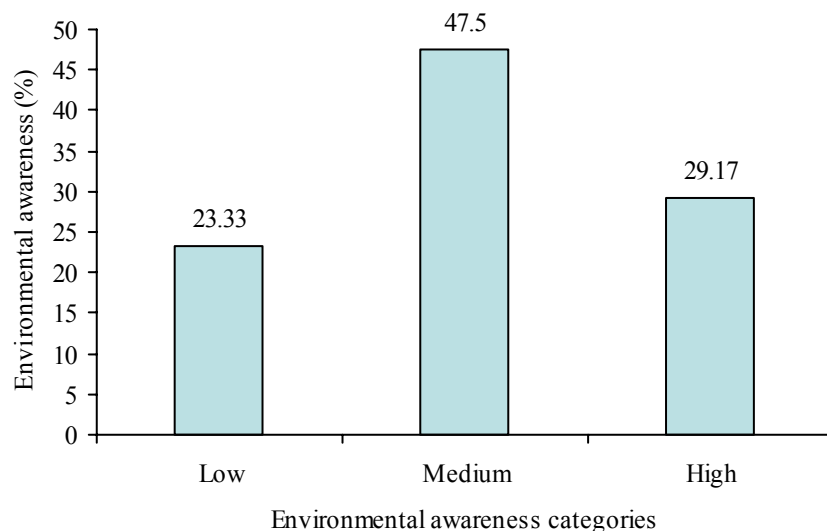


Figure 1. Distribution of the respondents according to environmental awareness of the FFS farmers in practicing IPM

Relationship between independent and dependent variables

The relationship of the selected characteristics of the FFS farmers with their environmental awareness is presented in Table 2.

Table 2. Relationship between the selected characteristics of the respondents with their environmental awareness

Dependent variable	Independent variable	Correlation coefficient (r)
Environmental awareness of FFS farmers	Age	-0.028NS
	Literacy	0.740***
	Family size	-0.047NS
	Farm size	-0.197*
	Annual income	-0.102NS
	Contact with change agent	0.133NS
	Cosmopolitaness	0.115NS
	Organizational participation	0.003NS
	Knowledge about IPM	0.861***
	Agricultural knowledge	0.720***

N= 120, Degrees of freedom= 118, NS= Not significant

Table value at 5 percent level = 0.176 * Significant at 0.05 level of probability
 Table value at 1 percent level = 0.230 ** Significant at 0.01 level of probability
 Table value at 0.1 percent level = 0.292 *** Significant at 0.001 level of probability

Relationship between the environmental awareness of the FFS farmers and their selected characteristics

Age of the respondents and their environmental awareness

The null hypothesis was “The age of the farmers is not related with their environmental awareness in practicing IPM.” Table 2 shows that the relationship between the two variables was negatively insignificant which indicates that the age of FFS farmers had no significant effect on their environmental awareness in IPM practice.

Relationship of literacy with environmental awareness of the FFS farmers

The null hypothesis was “The literacy of the farmers is not related with their environmental awareness in practicing IPM”. The relationship between these two variables was highly significant at 0.001 level of probability (Table 2). In other words, literacy plays a key role on the environmental awareness of the FFS farmers. It indicates that literacy makes an individual wise, broadens one’s outlook and extends the horizon of knowledge. The literate persons are

used to have frequent contact with printed materials and are exposed in various external sources which increase their power of understanding. So, the individual having more education was found to have high environmental awareness.

Knowledge about IPM and environmental awareness of the FFS farmers

The null hypothesis was “The knowledge about IPM of the FFS farmers is not related with their environmental awareness in practicing IPM”. The relationship between the two variables was highly significant (Table 2). The findings indicate that the FFM having more IPM knowledge had more environmental awareness. It fact, in the FFM, there were supposed to get sufficient information regarding the bad impact of pesticides on environment. Such information from the FFM played a significant role for the increase of their awareness about environmental.

Agricultural knowledge of the respondent and their environmental awareness

The null hypothesis was “The agricultural knowledge of the FFS farmers is not related with their environmental awareness in practicing IPM”. The relationship between the two variables was highly significant (Table 2). The findings indicate that the FFM farmer having more agricultural knowledge had more environmental awareness. It fact, in the FFM, the farmers were supposed to get sufficient information regarding the negative impact of pesticides used in their crop field. Agricultural knowledge helps the farmers to grow crops by using various cultivation practices in friendly environment.

CONCLUSION

The findings revealed that about three-fourths of the respondents had medium to high awareness while 23.33% of the respondents had poor environmental awareness in practicing IPM. It was found that the IPM and agricultural knowledge of the respondents had positive significant influence on their environmental awareness.

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