

## Farmer's awareness on environment related farm and homestead activities

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**Abstract:** A study was conducted in two villages of Chirirbandar upazila under Dinajpur district during July to August, 2007 using personal interview schedule to determine the extent of farmer's knowledge, awareness and also explore the relationship between ten selected characteristics of the farmer's in relation to their farm and homestead activities regarding environment. Findings indicated that the highest proportion (57.4 percent) of the farmers had medium knowledge and awareness regarding environment, while 24.8 percent had low knowledge and awareness and only 17.8 percent had high knowledge and awareness regarding environment. It was found that out of ten independent variables, age of the farmers had negative significant relation with their knowledge and awareness regarding environment while eight characteristics such as education, farm size, annual income, cosmopolitaness, communication exposure, innovativeness, agricultural knowledge and knowledge about homestead activities had significant and positive relationship. Only one characteristic such as farm size of the farmers was not significantly related with their knowledge and awareness regarding environment. Hence to increase farmers environmental knowledge, steps are necessary to be taken for more and more informal environmental oriented and adult education programmes should be launched in the villages by concerned agencies.

**Key words:** Awareness, environment and farm activities.

### Introduction

Environment is considered as a composite term for the conditions in which organisms live. Now a day, environment has drawn the attention of many nations throughout the world, because the global environment is changing more rapidly than any time in the known history. Agriculture and environment have a close relationship. The existence of man depends on proper and pollution-free environment. Environmental pollution caused in many ways, which now become an alarming issue of the modern world. Sattar (1994) listed many problems and hazardous action of fertilizers in soil, crops, human health, air, water and other environments. In Bangladesh, most of the population lives in rural area in which majority depends upon agriculture or harvesting of natural resources for their livelihood (Cunningham *et al.* 2003). The rural people are characterized by large family size, scarcity of food and pure drinking water, low quality sanitation and housing, open toilets and bathrooms, poor waste management, use of cowdung as fuel, poor awareness about health, low literacy rate, more poverty, etc. In rural areas most of them are deprived from proper education and are not concern about environmental problems. Due to lack of environmental education and awareness programmes, training and motivation activities; rural people used cowdung, homestead waste, crops and vegetables wastes as fuel instead of manuring in the crop field which leads to serve environmental problem and made the total village vulnerable to soil erosion, nutrient depletion or other natural hazards like air and water pollution. There is no scope for improvement of this alarming situation as the farmers are lacking with awareness about homestead activities (Sarker, 2006). In this case the farmers need training and motivation about production and judicious processing, preservation and utilization of organic waste from various sources for sustainable livelihood (Khatun, 2004). A few number of GO and NGO are working for sustainable agriculture (Sustainable agriculture is the integration of agricultural management technology to produce quality food and fibre while maintaining or increasing the soil productivity, farm productivity and the environmental quality) and rural development. In view of the problems, the study was conducted to assess the extent of environmental awareness

of the farmers related with their farm and homestead activities and to explore the relationship between farmer's socio-economic characteristics and their awareness on environment.

### Materials and Methods

The study was conducted in two villages of Chirirbandar upazila under Dinajpur district during July to August, 2007 to determine the extent of farmer's knowledge, awareness and also explore the relationship between ten selected characteristics of the farmer's in relation to their farm and homestead activities regarding environment. Ten selected characteristics included age, education, family size, farm size, annual income, cosmopolitaness, communication exposure, innovativeness, agricultural knowledge, knowledge about farm and homestead were considered as independent variables to determine the extent of awareness of the farmers regarding environment. For sampling purpose 15% of the farm family heads (a total of 101 farmers) were selected randomly from each of the two villages. The data were collected using a pre-tested personal interview schedule. After compilation of data the SPSS computer programmed was used for statistical analysis. Various Descriptive analysis such as range, frequency, number, percentage, mean and standard deviation were used for categorization and describing the variables whenever possible. Pearson's Product Movement Co-efficient of correlation ( $r$ ) was used in order to explore the relationship between the concerned variables. The computed values of correlation of co-efficient ( $r$ ) were compared against relevant table values. In order to have an understanding on the influence of independent variables on the dependent variable, step wise regression analysis was conducted.

### Results and Discussion

**Socio-economic characteristics of the farmers:** It was assumed that awareness regarding environment of an individual would be influenced by his socio-economic characteristics. Data contained in Table 1 revealed that the higher proportion (53.4%) of the farmer were between 35-50 years of age while up to 35 years and above 50 years constituted 21.8 and 24.8 percent farmers respectively. In

the study area high majority (35.6%) of the respondents belong to the 6 to 10 schooling years i.e. they completed up to high school level education.

**Table 1.** Independent variables characteristics profile

Categories	Scoring system	Possible range	Observed range	Categories	Farmers		Mean	SD
					No	%		
Age	Year	-	23-65	Young (upto 35)	22	21.8	44.56	9.64
				Middle (36-50)	54	53.4		
				Old(above 50)	25	24.8		
Education	Year of schooling	-	0-14	Illiterate/can sign only (0-0.5)	21	20.8	6.98	4.35
				Primary level (1-5)	28	27.7		
				Secondary level (6-10)	36	35.6		
				Upper secondary level ( above 10)	16	15.8		
Family size	Number	-	2-15	Small (2-4)	37	36.6	5.34	2.04
				Medium (5-6)	46	45.6		
				Large (above 6)	18	17.8		
Farm size	Hectare	-	0.25-5.35	Small (0.25-1)	48	57.4	1.04	0.90
				Medium (1.1-2)	33	32.7		
				Large (above 2)	10	9.9		
Annual income	'000' taka	-	38-438	Low (38-70)	33	32.7	127.33	82.27
				Medium (70-170)	46	45.5		
				High (above 170)	22	21.8		
Cosmopolitaness	Scale score	0-21	6-21	Low (upto 10)	31	30.7	12.79	4.27
				Medium (11-15)	45	44.5		
				High (above 15)	25	24.8		
Communication exposure	Scale score	0-54	11-41	Low (upto 20)	38	37.6	23.09	8.37
				Medium (21-35)	46	45.6		
				High (above 35)	17	16.8		
Innovativeness	Scale score	0-65	11-50	Low (upto20)	29	28.7	26.89	9.53
				Medium (21-40)	58	57.4		
				High (above 40)	14	13.9		
Agricultural knowledge	Scale score	0-30	7-30	Low (upto 10)	27	26.7	15.17	5.95
				Medium (11-20)	53	52.5		
				High (above 20)	21	20.8		
Knowledge about homestead activities	Scale score	0-20	6-20	Low (upto 10)	24	23.8	13.37	3.45
				Medium (11-15)	56	55.4		
				High (above 15)	21	20.8		

The literacy rate of the study area is below than the rate of Bangladesh 65.5% (BBS, 2004) but education helps of an individual to increases the power of observation; level of education is highly associated with the awareness of farmer's analysis, integration, understanding, decision making and adjustment to new situation. Education broadens the power of understanding and develops the abilities of analyzing facts and situations in order to take correction decision. The majority (45.6%) family size of the respondents belongs to the medium family category which is higher than that of the national average of 4.9 (BBS, 2004). Existence of medium and large family size in the study area may be due to the poor adoption of family planning measures and also may be some of the respondents lived in an extended family. According to the categorization of Department of Agricultural Extension (1999) majority of the respondents (57.4%) possessed small farms size (0.25-1 hac) which was higher than that of national average (0.08 hac) (BBS, 2004). This might indicated that the socio-economic level of the respondents of the study area was very good. From the Table 1 it was evident that the majority of the rural families are low to medium income group. Cosmopolitaness of individual improves ones knowledge and mentally makeup to face a difficulty which will helpful for the respondents to

maintain proper farm activities as well as to maintain the environmental integrity. In this study the high proportion (44.5%) of the respondents had medium cosmopolitaness as compared to the 24.8% of high and 30.7% having low cosmopolitaness (Table 1). The highest proportion (45.6%) had medium communication exposure which is generally regarded that the higher the communication maintained by the farmers with the surrounding environment the greater the awareness they obtained about various aspect. Agricultural knowledge of the farmers help them to take proper practice in their farm and homestead activities which is a positive aspect to be considered to environmental awareness in their farm and homestead activities. Data presented in Table 1 revealed that the highest proportion (52.5%, 67.4% and 55.4%) of the respondents had moderate agricultural knowledge, medium innovativeness and medium knowledge about agricultural activities respectively.

**Farmers awareness on environmental related with their farm and homestead activities:** Farmers awareness on environmental related with their farm and homestead activities was the main focus of the study. Data presented in the Table 2 indicated that 57.4% of the farmers fell into medium awareness category followed by 24.8% into low and only 17.8% into high category. This means that 82.2%

of the farmers were lacking of proper awareness on environmental issues.

**Table 2.** Distribution of farmers according to environmental awareness related with their farm and homestead activities

Categories	Farmers		Mean	SD	DV
	Number	Percent			
Low (upto 10)	25	24.8			
Medium ( 11-20)	58	57.4	15.17	5.64	31.88
High ( above 20)	18	17.8			
Total	101	100			

**Table 3.** Correlation between dependent and independent variables (N=101)

Dependent variable	Independent variables	Computed value of 'r' (N=101)	Table value of 'r' at 99 degree of freedom	
			0.05 level	0.01 level
Awareness on environment related with their farm and homestead activities	Age	-0.271**		
	Education	0.799**		
	Family size	-0.173 <sup>NS</sup>		
	Farm size	0.316**		
	Annual income	0.338**		
	Cosmopolitaness	0.528**	0.195	0.254
	Communication exposure	0.783**		
	Innovativeness	0.681**		
	Agricultural knowledge	0.757**		
	Knowledge about homestead activities	0.506**		

\* Correlation is significant at the 0.05 level of probability (2 tailed), \*\*Correlation is significant at the 0.01 level of probability (2 tailed), NS- Non significant

**Relationship between farmers selected characteristics and their extent of awareness on environmental related with their farm and homestead activities:** Correlation analysis indicated that level of education, farm size, annual income, cosmopolitaness, communication exposure, innovativeness, agricultural knowledge, knowledge about farm and homestead activities were found to have positive significant and age has negative significant relationship with their awareness on environment. Only family size was found to have negative insignificant relationship with their awareness on environment. This findings lead to the concluded that any attempt to raise the literacy level of the farmers would be helpful in raising their knowledge and awareness on environmental issues. The large farm size and high family income influences its owner to have more knowledge and aware about environment. The farmers who give frequent visits to outside places have opportunities to receive more information through the use of various interpersonal, groups, print and other mass media channels which ultimately could contribute to make the environment sound. These findings are confronted with the findings of Roy (2004) that there was a positive relationship between education, farm size, annual income, cosmopolitaness, communication exposure, innovativeness and environmental knowledge of the farmers on the use of modern agricultural technologies but in case of age there was an insignificant relationship with their environmental knowledge on the use of modern agricultural technologies. This findings lead to the conclusion that family size of the farmers have not contributed on the awareness and knowledge on environmental issues. This may be due to

reason that the family members do not greater interaction with other people in the survey area and the rate of sharing of information among the family members is low. Salam (2003) found the same result that family size of the farmers had significant negative effect with their constraint in adopting environmentally friendly farming practices. This is very rational to think that agricultural knowledge of a respondent gives him capacity to response according to situation and contributes to the analysis of situation which in turns helps to develop environmental knowledge. Thus high agricultural knowledge of respondents to grow crops by using environmentally friendly cultivation practices. Hanif (2000) revealed the same that a positive significant relationship between agricultural knowledge of the respondents with their awareness on environmental pollution. Environmental awareness is now a growing concern all over the world in general because the global environment which is changing more rapid than before. Awareness of farmers about their environmental related farm and homestead activities is the first step to meet the situation. The following recommendations are suggested to overcome the situations i) Steps are necessary to be taken for more and more informal environment oriented and adult education should be launched in the villages by concerned agencies. ii) GO and NGOs should take effective measure to help the farmers in upgrading their environmental related agricultural knowledge by disseminating new ideas and facts through personal, group and mass contact and iii) Steps should be taken to pay more attention towards the poor respondents to raise their

income so that they become aware of environmentally safe cultivation techniques along with high income respondents.

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