



Study on Existing Status of Farm Environment and Awareness in a Farming Community of Dinajpur District

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Abstract

The main purpose of this study was to investigate the existing status and activities of the farmers in a farming community and also to evaluate the level of knowledge and awareness of the farmers on environmental degradation. From the findings of results and discussion it was observed that the illiteracy rate was higher (45%) in small farmers compared to medium (30%) and large (25%) farmers. The percentage of knowledge and awareness of the large farmers about soil organic matter depletion was about 80%. In case of the small farmers about 85% were unaware about soil organic matter depletion. Findings also indicated that 80% of the large farmers had awareness about the impact of soil organic matter depletion while 85% of the small farmers were not aware about the impact of soil organic matter depletion and 70% of the medium farmers had awareness. Findings also indicated that 25% of the large farmers, 15% of the medium farmers and 10% of the small farmers had knowledge about the application of excess chemical fertilizer and 50% of them did not response. Thirty five percent of the large farmers, 25% of the medium farmers and 10% of the small farmers had knowledge that due to the effect of pesticide diseases occurred on human health and 30% of them did not response. Twenty percent of the large farmers, 10% of the medium farmers and 5% of the small farmers had knowledge about the preservation techniques of soil quality and 65% of them did not response. It was also found that out of the four independent variables i.e. age, level of education, occupation and farm size had positive significant relationship with environmental awareness.

Key words: Existing status, awareness

Introduction

Bangladesh is one of the most densely populated countries in the world with an area of 147,570 sq. kilometers. The economy of Bangladesh primarily is dependent on agriculture. About 76% (BBS, 2003) of the total population live in rural areas and are directly or indirectly engaged in a wide range of agricultural activities. The agriculture sector plays a very important role in the economy of the country accounting for 21% (BBS, 2007) of total GDP in 2006-2007. The agriculture sector occupied about 62% (BBS, 2003) of total national employment sectors.

To meet the increasing demand of growing population crop field is used intensively where farm environment is one of the main pre-requisites for sustainable crop production. However this intensification caused soil degradation and responsible for the losses of crop yield and also sustainable environment. So it is very important to study farm environment. Moreover, this knowledge can be used by the Government to implement new policy related to the farming community.

However most of the environmental degradation is occurring in rural area due to lack of knowledge about environmental degradation and its effects. Lack of awareness about the

environment is another cause of environmental degradation. Most of the people don't know how to manage the environment. Because of most of the rural people are deprived from proper education and is not concern about environmental problems. Therefore, environmental degradation is increasing day by day. Environmental degradation is associated with the diffusion of modern technologies such as ground water depletion from many tube wells, pollution of water system from chemical fertilizers and pesticides For solving this problem, proper knowledge should be required about the use of modern agricultural technologies. In this regard, many government and nongovernmental organization have to take steps for the awareness of people, about the proper use of modern agricultural technologies.

Methodology

The methodology in conducting the study on farm environment and awareness e.g. site selection, field level data collection through questionnaire survey were being carried out in two villages (Darbarpur, and Shibganj) of Dinajpur sadar under Dinajpur district. Dinajpur is a district of Rangpur division in the extreme northern part of Bangladesh with an area of 35472 square km which lies between 25°14" and 23°38" north latitudes and between 88°05" and

85°28" east longitudes (BBS-2005). The study area lies within the AEZ-25. Physiographically, the land topography is mainly medium high, non calcareous dark grey flood plain soils. Maximum temperature is 33.5°C and minimum temperature is 10.5°C. Annual total rainfall is about 2044 mm. The district is bounded on three sides by 200 km long Indian border. It is 112-120 feet (37.5) high from the sea level. Dinajpur has 12 rivers. Among them some main rivers are: Karatoya, Atrai, Mahananda, Tangon, Punarvoba, Ghaghra, Gabura, Gorvessori, Kanchan, Depa, Choto jamuna, Kakra etc.

The researcher collected information through personal interview from the individual respondent at their home. An introductory visit was made to the study area to become familiar with the respondent and their environment. During visit the objectives of the study were explained clearly to most of the respondents.

The respondents were interviewed at their own house at leisure time so that they could give accurate information in a sound mind. No serious problem was faced by the respondents during data collection. Excellently cooperation was received from all respondents during collection

of data. The data were collected from 60 respondents from August 01 to September 30.

The village's farmer (usually head of the farm) constituted the population for this study. The data for this study was collected from 60 respondents from two villages under Dinajpur sadar upazila who were involved in farming system. The respondents of the villages are Darbarpur and Shibganj. Out of each village 30 farmers were selected. Thus, a total of 60 farmers constituted the sample for this study. A reserve list of 6 respondents in the village was also made so that the respondents of this list could be used if any respondents from the original sample would not be available at the time of interview.

Results and Discussion

In this chapter the finding of the study and interpretation of the results has been presented. These are presented in these sections according to the objectives of the study. This sections deals with the selected characteristics of the farmers, methods of cultivation, cropping pattern, sources of organic manure, use of chemical fertilizer, farmer's awareness on soil organic matter degradation, farmer's awareness and knowledge on environment regarding farm.

Table 1. Distribution of cropping pattern in the study area according to farmer's category and year

Cropping pattern	Farmer's category											
	Large			Medium				Small				
	2011	2010	2009	2008	2011	2010	2009	2008	2011	2010	2009	2008
Single cropping	3 (15)	3 (15)	5 (25)	6 (30)	3 (15)	4 (20)	5 (25)	6 (30)	9 (45)	12 (60)	13 (65)	10 (50)
Double cropping	4 (20)	5 (25)	5 (25)	5 (25)	6 (30)	5 (25)	5 (25)	5 (25)	5 (25)	4 (20)	4 (20)	6 (30)
Multiple cropping	13 (65)	12 (60)	10 (50)	11 (45)	11 (55)	11 (55)	10 (50)	9 (45)	6 (30)	4 (20)	3 (15)	4 (20)

From The table 1 it was observed that among the large and medium farmer, multiple cropping was very much popular and percentage was comparatively high (65% in large farmer and 55% in medium farmer) during the year 2011. Only 9% of these two categories followed the single cropping pattern. From the year 2008 to 2011 the percentage was gradually increased,

the percentage of double crop followed by them was 20% in large farmer and 30% in medium farmer during the year 2011 respectively.

Incase of small farmer, multiple cropping was not so popular; only 20% and 30% were followed during the year 2011 and 2010 respectively. The percentage following double

cropping pattern by them was 30% and 25% during the year 2011 and 2010. About 45% of

the small farmer followed single cropping pattern during the year 2011.

Table 2. Type of fertilizer application according to farmer's category

Type of fertilizer	Respondents, N=60		
	Large Number %	Medium Number %	Small Number %
Organic fertilizer	13 (65)	13(65)	17(85)
Chemical fertilizer	5 (25)	4 (20)	2 (10)
Both (organic and chemical fertilizer)	2 (10)	3 (15)	1 (5)

The table 2 revealed that among the three categories of farmer, highest proportion of the small farmers used organic manure (85%) compared to large (65%) and medium farmers (65%). On the other hand chemical fertilizer was mostly used by large (25%) and medium farmers (20%). In case of organic manure and chemical

fertilizer, only 10% of the small farmers followed.

Farmer's awareness on soil organic matter depletion

The awareness of the farmers about soil organic matter depletion presented in the Table 3

Table 3 Farmer's awareness on soil organic matter depletion

Farmer's awareness	Farmer's category					
	Large		Medium		Small	
	Aware about soil organic matter depletion	Unaware about soil organic matter depletion	Aware about soil organic matter depletion	Unaware about soil organic matter depletion	Aware about soil organic matter depletion	Unaware about soil organic matter depletion
Chemical fertilizer	16 (80%)	4 (20%)	8 (40%)	12 (60%)	5 (25%)	15 (75%)
Multiple cropping	10 (50%)	10 (50%)	6 (30%)	14 (70%)	3 (15%)	17 (85%)
Tractor	14 (70%)	6 (30%)	12 (60%)	8 (40%)	4 (20%)	16 (80%)
Insecticide	10 (50%)	10 (50%)	6 (30%)	14 (70%)	3 (15%)	17 (85%)

The table 3 revealed that about 80% of the large farmer had knowledge about soil organic matter depletion and they identify chemical fertilizer as cause.20% of them were unaware about soil organic matter depletion.

On the other hand, 75% of the small farmers were unaware about soil organic matter depletion and 25% of them were unaware and detected chemical fertilizer as a cause. Among the

medium farmers, 40% had awareness and they also detected the same.

Other causes of soil organic depletion multiple cropping, tractors, insecticide also detected by the three categories of farmer. The data also revealed that greater proportion of small farmers unaware about soil organic matter depletion (85%, 80%, and 85%).

Table 4. Awareness on insecticides having residual effect according to farmer’s category

Impact	Farmers category					
	Large		Medium		Small	
	Response	Not Response	Response	Not Response	Response	Not Response
Insecticides having more residual effect	15 (75%)	5 (25%)	12 (60%)	8 (40%)	10 (50%)	10 (50%)
Insecticides having less residual effect	16 (80%)	4 (20%)	13 (65%)	7 (35%)	11 (55%)	9 (45%)

The table 4.20 revealed that among the large farmer about 75% knowledge about insecticides having more residual effect and 25% did not response. The data also revealed that 50% of the small farmers had knowledge about insecticides having more residual effect.

About 50% of them did not response or they did not have the knowledge about insecticides. In case of medium farmers they responded more compared to small farmers.

Conclusion

From the study, it was found that most of the respondents were lacking of proper awareness on environmental issues. On the basis of this fact, majority of the respondents are still in darkness about environmental awareness. There was no significant relationship among family size of farmers with their environmental awareness. 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 due to reason that the family members do not have greater interaction with other people in the survey area and rate of sharing of information among the family members is low. Education, farm size, occupation and age had a positive and significant relationship with their environmental awareness. These findings concluded that higher literacy level of farmers would be helpful in raising their knowledge and awareness on environmental issues. Hence to increase farmer’s environmental knowledge, steps are necessary to be taken for more and more informal environment oriented and adult education programs should be launched in the village’s concerned agencies. Large farm size influences its owner to have

more knowledge and aware about environment. 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.

References

Anon. 1992. Agricultural and Forestry make significant contribution of Global warming." The Bangladesh Observer, 23rd April, 5p.

Ansari, A. 2005. Effect of organic farming on soil nutrients and quality of carrot.M.S.Thesis,Department of Environmental Science,Bangladesh Agricultural University, Mymensingh. 101p.

BBS (Bangladesh Bureau of Statistics). 2003. Statistical Year Book of 2002 Ministry of planning, Government of the People's Republic of Bangladesh, Dhaka.

Botkin, D. B. and Keller, E. A. 1998. Environmental Science-Earth as a living planet. Second edn. John Wiley and sons, Inc., New York, USA.

Hossain, M. Z. 2001. Farmer's view on soil organic matter depletion and its management in Bangladesh, *J. Nutritional Cycle Agro. Ecosystem*, **61**(2):197-204.

