



Farmers Attitude towards Organic Farming: A Case Study in Chapainawabganj District

**Mithun Kumar Ghosh^{1*}, Mehedi Hashan Sohel², Nazmin Ara³,
Fatima Tuj Zahara³, Sajid Bin Nur³ and Md. Mahamudul Hasan³**

¹Department of Agricultural Extension and Rural Development, EXIM Bank Agricultural University Bangladesh, Bangladesh.

²Department of Soil Science, EXIM Bank Agricultural University Bangladesh, Bangladesh.

³Faculty of Agriculture, EXIM Bank Agricultural University Bangladesh, Bangladesh.

Authors' contributions

This work was carried out in collaboration among all authors. Author MKG designed the study, performed the statistical analysis, wrote the protocol and wrote the first draft of the manuscript. Author MHS managed the analyses of the study. Authors NA, FTZ, SBN and MMH managed the literature searches. All authors read and approved the final manuscript.

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ABSTRACT

The main purpose of the study was to evaluate farmers socio-economic status, attitude and relationship among them towards organic farming. The study was conducted in five upazilas of Chapainawabganj district in Bangladesh. A simple random sampling technique was used to select 40 respondents. Attitude of respondents toward organic farming was measured with twenty statements using five point likert type scales. To explore the relationship between the concerned variables correlation coefficient (r) was computed. Descriptive statistics were used to describe the variables. Majority of the respondents were male (90%), average age was 44 years. 45% respondents were illiterate, had average 4 years of farming experience. Majority of the respondents (80%) had positive attitude towards organic farming. Relatives and Extension Agents were found as the main information source of organic farming for most of the respondents.

*Corresponding author: Email: mithunbsmrau88@yahoo.com;

Cosmopolitaness and Extension contact had positive and significant relationship with their attitude (.461 and .377 respectively). It was concluded that farmers were knowledgeable about organic farming and also had favourable attitude toward its practices. Efforts should therefore be made to promote and increase the practice of organic farming. By promoting organic farming practice, farm income is increased than conventional farming.

Keywords: Organic farming; correlation; cosmopolitaness; extension; attitudes.

1. INTRODUCTION

Agriculture is the building block and main food source of a country. In the world where the number of people is growing rapidly in the last 50 years, agriculture plays a significant role. With green revolution, where agriculture became heavily commercialized and chemicals were introduced, agriculture made a great advancement in terms of efficiency and effectiveness. In the last 40 years, agricultural production doubled even though cropland area has increased only by 12 percent [1]. By 2050 world food demand is expected to double in comparison with the levels of 20th century [2]. It is feeding all and employing many though conventional agriculture causes number of problems like depletion of natural resources, environmental degradation and impacts on human health [3,4]. There are alternatives for conventional agriculture. One of which is organic agriculture which reduces negative impacts of agriculture and offers price premium for the growers [5,6].

Organic Farming is a holistic or integrated agricultural production system characterized by the high inputs of capital, organic fertilizers, labor or labor-saving technologies such as pesticides relative to land area [7,8]. It is in contrast with extensive farming which involves a low input of materials and labor with the crop yield largely depending on the naturally available soil fertility, water supply or other land qualities. Now-a-days, intensive crop based agriculture, involving the use of mechanical ploughing, chemical fertilizers, herbicides, fungicides, insecticides, plant growth regulators and/or pesticides. Agricultural mechanization also increases with its association [9,10].

Although numbers of organic growers are increasing, it is still very small portion of the whole agriculture. Organic farming is one of the widely used methods, which is thought of as the best alternative to avoid the ill effects of chemical farming like environmental pollution, soil health degradation, human health hazards and

biodegradation. As a result, there is enormous potential in practicing organic farming in growing lands, because organic agriculture is productive and sustainable [11,12]. The most popularly accepted definition of organic farming is; "Organic agriculture is a holistic production management system which promotes and enhances agro-ecosystem health, including biodiversity, biological cycles and soil biological activity".

The concept of organic farming has been adopted in Bangladesh in many years ago. Kazi and Kazi Tea Estate (KKTE) the only company producing world class organic tea, vegetables and herb to their 1400 hectares certified land both for domestic and export market [13,14]. PROSHIKA a renowned NGO in Bangladesh is promoting organic agriculture as a part of its mission to develop a sustainable alternative agro-system and popularize organic agricultural practices. In 1978 PROSHIKA commenced an action research to produce safe and poison-free food and encourage its group members and other interested people to adopt organic agricultural practices [15,16]. Rahman and Mikuni [17] showed that farmers possessed favorable attitudes towards sustainable agriculture issues in Bangladesh.

1.1 Objectives of the Study

- i. To determine the socio-economic status of the respondents in the study area;
- ii. To know the attitude of farmers on organic farming;
- iii. To examine the relationship between the socio-economic status and attitudes of farmers towards organic farming.

2. METHODOLOGY

2.1 Location of the Study Area

The locale of the study was Chapainawabgonj District of Rajshahi Division. Chapainawabganj is situated between the latitude 24'22 to 24'57 and longitude 87'23 to 88'23. Chapainawabgonj Sadar

Upazila, Nachole Upazila, Gomostapur Upazila and Sibgonj upazila were purposively selected for the study because noticeable practice of organic farming.

2.2 Data Collection Procedure

A list of all organic farmers was collected from the Upazila Agricultural Extension Office, NGO's and with the help of Sub Assistant Agriculture Officers (SAAOs). From the list, 40 farmers were selected using simple random sampling technique. Data were collected through structured interview. Farmers' attitude towards organic Farming was the dependent variable of the study. For measuring attitude of the respondents, a 5 point Likert scale [18] was used. There were 20 statements including both positive and negative to avoid the biasness of the respondents. Each respondent was asked to indicate his extent of agreement or disagreements against each statement along a 5 point scale of strongly agree, agree, neutral, disagree and strongly disagree. Weights assigned to these responses were 5, 4, 3, 2, and 1 respectively for positive statements and reversely for negative statements. The total score of a respondent was determined by summing up the weights for responses against all 20 statements. Based on the computed scores the respondents were classified into three categories according to Salawat [19] i.e., unfavorable attitude (up to 62 scores), moderately favorable attitude (63 to 73 scores) and highly favorable attitude (above 74 scores). The independent variables of this study were farmers' sex, age, education, marital status, family size, annual income, farming experience, land ownership, area, Cosmopolitaness, extension contact, and information source. All of these variables were measured as required.

2.3 Data Analysis Procedure

Statistical tests like frequency counts, percentage, mean, standard deviation were used for analysis and interpretation of data. Correlation coefficients were used for hypothesis testing and 5% level probabilities were used as the basis for exploring relationship between the concerned variables throughout the study.

3. RESULTS AND DISCUSSION

From the Table 1 it is indicated that 90% of the respondents of the study area were male with 44

years of average age. All of them were married having medium family size (4 to 6 members). About half (45%) of the farmers were illiterate and 75% had 2 to 11 years of farming experience.

Two third of the respondents had medium (55001-225000tk/year) annual income whereas 65% of the respondents took land as leased and 87.5% respondents had an area of 0.0872 to 0.9131 hectare of land. About 75% of the farmers showed never to rare cosmopolitaness since 45% of them contacted extension personnel at least once per year. About 55% of the respondents got information in organic farming from extension agents followed by relatives (30%) and others respectively.

Data presented in the Table 2 indicate that majority (80%) of the respondents showed moderately favorable attitude to the organic farming followed by highly favorable attitude (12.5%) and unfavorable attitude (7.5%) respectively.

On an average, total 92.5% respondents showed positive attitude because they earned more output from low input. Mainly they were produced the organic fertilizer in their home easily and used it in their field without any cost. They were collected the cowdung and household waste from their rearing animal and house that were used for making compost and vermin-compost (organic fertilizer). They could also sold these organic fertilizer in the market that's why they could earned money. The price of organic fertilizer was less than the price of inorganic fertilizer. They were found more or less same yield each year without hampering the fertility of soil. They were benefited by doing organic farming in 4 to 5 year and they thought, they would be able to earn more money in future that's why they were showed positive attitude.

3.1 Relationship between Selected Socio-characteristics of the Farmers and Their Attitude towards Organic Farming

Coefficient of correlation was computed in order to explore the relationships between the socio economic characteristics of the farmers and their attitude towards organic farming (Table 3). The null hypothesis was "there was no statistically significant relationship exists between the selected characteristics of the farmers and their attitude towards organic farming".

Table 1. Socio-economic characteristics of the respondents

| Socio-economic characteristics | | Frequency | Percentages (%) | Mean | SD |
|--------------------------------|-----------------------------------|-----------|-----------------|-----------|-----------|
| Gender | Male | 36 | 90 | | |
| | Female | 4 | 10 | | |
| Age | Up to 30 years | 6 | 15 | 44 Years | 12.654 |
| | 31 to 60 years | 28 | 70 | | |
| | More than 60 years | 6 | 15 | | |
| Marital Status | Married | 40 | 100 | | |
| | Unmarried | 0 | 0 | | |
| Family Size | Small | 6 | 15 | 5 | 1.406 |
| | Medium | 31 | 77.5 | | |
| | Large | 3 | 7.5 | | |
| Education | Illiterate | 18 | 45 | 3.1 | 3.028 |
| | Primary education | 17 | 42.5 | | |
| | Secondary education | 5 | 12.5 | | |
| | Tertiary education | 0 | 0 | | |
| Farming Experience | Less | 8 | 20 | 4.2 | 3.943 |
| | Medium | 30 | 75 | | |
| | High | 2 | 5 | | |
| Income | Low (0-55000tk/year) | 7 | 17.5 | 141312.83 | 83255.228 |
| | Medium (55001-225000tk/year) | 30 | 75 | | |
| | High (Above 225001tk/year) | 3 | 7.5 | | |
| | | | | | |
| Land Ownership | Own land | 9 | 22.5 | 2 | 0.817 |
| | Leased | 26 | 65 | | |
| | Borga | 1 | 2.5 | | |
| | Own+ Leased | 4 | 10 | | |
| Area | Small | 0 | 0 | 0.5001 | 0.413 |
| | Medium | 35 | 87.5 | | |
| | Large | 5 | 12.5 | | |
| Cosmopolitan-ness | Never | 18 | 45 | 1.075 | 1.309 |
| | Rarely (1 or 2 days/month) | 12 | 30 | | |
| | Occasionally (3 or 4 days/month) | 8 | 20 | | |
| | Frequently (5 or more days/month) | 2 | 5 | | |
| Extension Contact | Never | 13 | 32.5 | 0.95 | 0.846 |
| | Rarely (1 day/month) | 18 | 45 | | |
| | Occasionally (2 days/month) | 7 | 17.5 | | |
| | Frequently (3 or more/month) | 2 | 5 | | |
| Information Source | Newspaper | 0 | 0 | 4.775 | 0.698 |
| | Television | 0 | 0 | | |
| | Friends | 1 | 2.5 | | |
| | Relatives | 12 | 30 | | |
| | Extension Agent | 22 | 55 | | |
| | Others | 5 | 12.5 | | |

Table 2. Attitude of the respondents

| Sl. No. | Particulars | No. of respondents | Percentage | Mean | SD |
|---------|----------------|--|------------|------|-------------|
| 1. | Attitude Level | Unfavorable attitude (Up to 62) | 3 | 7.5 | 69 5.064 |
| | | Moderately favorable attitude (63 to 73) | 32 | 80 | |
| | | Highly favorable attitude (Above 74) | 5 | 12.5 | |

Table 3. Relationship between the socio economic status of the farmers and attitudes of farmers towards organic farming

| Dependent variable | Socio economic status of the farmers | Correlation coefficient (r) |
|--|--------------------------------------|-----------------------------|
| Attitudes of farmers towards organic farming | Gender | .067 |
| | Age | -.226 |
| | Family member | -.094 |
| | Farmer's experience | -.280 |
| | Education | -.018 |
| | Income | .104 |
| | Land ownership | .124 |
| | Area | .020 |
| | Cosmopolitaness | .461** |
| | Extension Contact | .377* |
| | Information source | .174 |

* Significant at 0.05 level of probability

** Significant at 0.01 level of probability

From the Table 3, it is suggested that the Cosmopolitaness and Extension contact of the farmers had significant positive relationships with their attitude towards organic farming. The level of cosmopolitaness had positive and significant relationship with the farmer's attitude towards organic farming as the "r" value was 0.461** at 1% of significance level. So the null hypothesis 'there was no significant relationship between cosmopolitaness and the attitude towards organic farming' was rejected. That means higher the cosmopolitaness among the respondents, higher the attitude level of the respondents towards organic farming.

Extension contact of the respondents had positive significant relationship with the attitude of the farmers towards organic farming and the computed 'r' value was 0.377* at 5% level of significance. So the null hypothesis 'there was no significant relationship between extension contact and the attitude towards organic farming' was rejected. That means higher the level of extension contact of the respondents, the higher their attitude level towards organic farming.

In case of marital status no result was found because there was no difference between the variable. The entire respondent was married that's why it remains constant. No value was found in the above Table 3.

4. CONCLUSION

After completing this study, it concluded that most of the farmers were male, between age 51 to 57 years, having medium family size, small farm holding with leased area and had primary level of education with medium annual income and medium farming experience, and the information source from relatives and extension agents. Most of them had medium extension contact, and medium cosmopolitaness. Most of the respondents had moderately favorable attitude towards organic farming. The result was found that farmers had a moderate attitude towards organic farming. This might be due to the fact that a considerable proportion of the farmers had not enough training exposure, moderate use of source of information and low extension contact. Coefficient of correlation

test indicated that Cosmopolitaness and extension contact showed positive significant relationship with the attitude of the farmers towards organic farming that means higher the above-mentioned characteristics of the respondents, higher was their attitude towards organic farming.

5. RECOMMENDATIONS

- Traditional seeds, organic fertilizer and organic manure should be provided to the interested farmers by the government at subsidized rate with loans to the farmers who are involved in organic farming.
- Government and non-government organization may provide proper training on organic farming practices to motivate farmers.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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