COMMUNICATION EXPOSURE OF THE FARMERS IN RELATION TO RICE PRODUCTION TECHNOLOGIES

BY

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A Thesis

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CERTIFICATE

This is to certify that the thesis entitled, " ***Communication Exposure of the Farmers in Relation to Rice Production Technologies***" Submitted to the Faculty of Agriculture, Sher-e-Bangla Agricultural University, Dhaka in partial fulfillment of the requirements for the degree of ***Master of Science (M.S) in Agricultural Extension And Information System*** embodies the result of a piece of bona fide research work carried out by ***Md.Miraz Mollah*** Registration **No. 00186/23944** under my supervision and guidance. No part of the thesis has been submitted for any other degree or diploma.

I further certify that such help or source of information, as has been availed of during the course of this investigation has duly been acknowledged.

Dated:

Place: Dhaka, Bangladesh

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(Associate Prof. Md.Rafiquel Islam)
Supervisor

ABBREATION

BRRI = Bangladesh Rice Research Institute

IRRI = International Rice Research Institute

DAE = Department of Agricultural Extension

NAEP = New Agricultural Extension Policy

A.E.O = Agricultural Extension Officer

U.A.O =Upazila Agricultural Officer

SPSS = Statistical Package for Social Science

MUI = Media Used Index

GDP = Gross Domestic Product


DEDICATED TO
MY
BELOVED PARENTS

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The author

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ABSTRACT

The purpose of the study was to have an under standing on the communication exposure of the farmers in receiving information on rice production technologies and to determine the relationship of selected characteristics of the farmers with their communication exposure

Data were collected from 100 randomly respondent of two selected villages of Damador union under Phultala Upazila of Khulna district. Data were collected by using an interview schedule from the farmers during 1st February to 28th February, 2006. The findings indicated that the farmers in the study area used all types of communication media. Among the selected communication media Sub-Assistant Agricultural Officer, fertilizer dealer, television, group discussion meeting and neighbours and relatives were the most used communication media respectively. Progressive farmers, friends, newspapers, Agricultural Extension Officer, meeting at result demonstration, also came out as important media for communicating agricultural information. But l radio, farm and home visits, Upazila Agricultural Officer, seed dealer and companies representative media were used as least media respectively.

Correlation analysis indicated that age, farming experience; cosmopoliteness and agricultural knowledge of the farmers were significantly related with their use of communication media. However, farm size, organizational participation, innovativeness of the farmers had no significant relationship with their communication exposure

CHAPTER I

INTRODUCTION

Bangladesh is predominantly an agricultural country inhabiting about 123.1 millions of people in its 147, 570 sq. kilometers of area (B.B.S. 2003). The economy of the agricultural sector provide 21.19 percent domestic product of Bangladesh. So agriculture plays an important and vital role in employment, poverty alleviation, food security, standard of living and earning.

Asia's 5th and 8th world most populas country Bangladesh. Her per capita income is about $ 470 and its life expectancy of 62.49 years (B.B.S. 2003) and about 80% of our people live in rural areas and 51.3 percent of our populations are engaged in agriculture (B.B.S.-2004, Labour force survey 2002-03 P.49). Rice is the main crop of our agriculture because rice is the staple food in Bangladesh but with the time as the population increased at a rapid rate place the gap between rice production and requirements of food for the millions widened. For this food shortage began to show up with increasing severity.

Food deficiency is a chronic problem over long past although the total production in the country increased from 10.13 millions tons in 19.73 millions tons in 1993 (Satter 1995). World production of rice also increase higher rate. Bangladesh grows only about 1.1317 tons per hectare (B.B.S. 2004). On the other hand South Korea, Japan, North Korea, USA and Russia and Pakistan produce 6.2, 8.5, 5.8, 5.3, 3.8, and 2.4 tons respectively. (Sources: FAO 2004. Outlook Various issues).

This is the reason actually farmers do not get proper technology through proper communication exposure. So in case of rice production, our rice farmers do not gate technology in timely. So our production is lower than other developed countries.

Thus situation cannot be continued for years long, Bangladesh had to over come these problems very urgently and several improved technologies and innovations have been developed by different research organizations to recover the target rice production for which technologies must be transferred to the end user. Because the generation of technologies is not the ultimate goal of the nation if the rice but their production will be increased if farmers get the latest communication exposure properly

According to Kashem and Halim (1991). transfer of technology means the movement of information technology from a research system through an extension system to the client.

The Department of Agricultural Extension (DAE) is the largest extension organization in Bangladesh, which is directly involved, in motivating farmer using agricultural technologies in order to improve productivity and to increase production. The procedures of conducting extension work of the DAE have been partially modified under the Agricultural Support Service Project (ASSP).. The ASSP is also being recognized under New Agricultural Extension Policy (NAEP).

Transfer of technologies depends on the access to relevant communication exposure by the farmers and their capabilities and commitment to use the available media in time. For Effective changes in farmer's knowledge and skill in rice production, a sound system of communication exposure from its source is a pre-requisition.

OBJECTIVES

The following specific objectives were formulated for giving proper direction to the study.

1. To determine and describe the selected characteristics of the farmers. The selected characteristics were:

   A) Personal characteristics

   i) Age

   ii) Level of education

   iii) Farming experience

   iv) Innovativeness

   v) Agricultural knowledge

   B) Economic characteristics

   vi) Farm size

   C) Social characteristics

   vii) Organizational participation

   viii) Cosmopoliteness.

2) To determine and describe the extent of use of communication media by the farmers in relation to rice production technologies

   The selected communication media were:

   A) Individual contact media—

   i) Sub-Assistant Agriculture Officer

   ii) Agricultural Extension Officer (A.E.O.)

   iii) Upazila Agricultural Officer (U. A. O.)

   iv) Companies' representative (C. R.)

   v) Farm and Home visit

   B) Group contact media

   vi) Group discussion meeting

   vii) Meeting at result demonstration

C) Mass contact media

viii) Radio

ix) Television

x) Newspaper.

D) Interpersonal contact media

xi) Progressive farmers

xii) Friends

xiii) Neighbours and Relatives

xiv) Seed dealer

xv) Fertilizer dealer.

The selected rice production technologies were:

i) Recommended modern varieties

ii) Recommended dose of fertilizer

iii) Plant protection measures

iv) Recommended irrigation

3) To determine the relationships between the individual characteristics and communication exposure of the farmers in relation to rice production technologies.

Statement of the problem

The main purpose of this study was to analyze the extent of use of communication media by the rice farmers in Damador union under Phultala Upazila. This study also attempted to determine the relationship between the extent use of communication media by rice farmers and their selected characteristics. This was done by seeking answers to the following questions:

a) Which characteristics of rice farmers of Damador union under Phultala Upazila are related to the communication exposure?

b) To what extent the communication exposure are being used by the farmers on rice production technologies.

c) Did the selected characteristics of farmers on rice production affect their communication media?

For getting clarification of the above question the researcher undertook a study entitled communication exposure of the farmers in relation to rice production technologies.

Scope and Limitation of the study

The present study was conducted with a view to have an understanding about the communication exposure of the farmers in relation to rice production technologies.

However in order to conduct the study in meaningful manner with limited time, money, and other resources available to the researcher, the following limitations were considered throughout the study:

i) The study was conducted in Damador union of Phultala Upazila of Khulna district. Only two villages were selected among 37 villages of Phultala Upazila.
ii) Only eight characteristics of the farmers were selected for investigation in the study.
iii) Population of the study was limited.
iv) There were many communication media where farmers can receive information about rice production technologies but only fifteen communication media were selected.
v) The respondents were always busy in agricultural and household activities. So it was hard to collect information without making an appointment with them in suitable time.

Assumptions

While undertaking the study the researcher made the following assumptions in mind:

i) The researcher is well adjusted to the physical, social and cultural environment of the study area. Hence, the respondents furnished their correct option without any hesitation and biasness.

ii) The respondents selected for this study were capable of furnishing proper responses to the questions included in the interview schedule.

iii) Views and opinions furnished by the farmers included in the sample are the representative views and opinions of the whole population of the study area.

iv) Data provided by the respondents were reliable and true.

Statement of hypothesis

Hypothesis may be divided into two categories – a) Research hypothesis (Hi) and b) Null hypothesis (Ho). The following hypotheses are formulated to explore the relationship between the dependent and independent variables. The research hypothesis for this study was:

There was a relationship between age, education, farm size, farming experience, organizational participation, cosmopoliteness, innovativeness, agricultural knowledge of farmers and their communication exposure in relation to rice production technologies.

For testing the hypothesis statistically, they were transferred into null form as follows:

There was no relationship between age, education, farm size, farming experience, organizational participation, cosmopoliteness, innovativeness, agricultural knowledge of farmers and their communication exposure for receiving information on rice production technologies.

Definition of the terms

Certain key terms used throughout the study are defined in this section for clarity of understanding.

Communication exposures

The term communication exposure refers to the extent of contact made by rice farmers with various communication media in receiving scientific information about recommended variety of rice, recommended dose of fertilizer and recommended irrigation and plant protection measures.

Communication media

The term communication media refers to the channels through which various information are diffused to the rice farmers about different aspects of rice cultivation.

Age

Age of the farmer is defined as the period of time in years from birth to the time of interview. It was obtained by asking direct questions.

Education

Refers to the number of years, a farmer attended in school.

Farm size

The farm size means the cultivated area either owned by farmers family or obtained on borga / lease.

Farming experience

Farm experience of a farmer is defined on the basis of his involvement in activities related to agriculture.

Organizational participation

Organizational participation of a farmer refers to as taking part in an organization as general member or executive member.

Cosmopoliteness

Cosmopolitness may be defined as the orientation of an individual externally outside his own social system.

Innovativeness

Innovativeness refers to the degree to which an individual is relatively earlier in adopting new ideas than the other member of social system (Rogers 1993). This was comprehended by the quickness of accepting innovations by an individual in relation to others and was measured on the basis of time dimension.

Agricultural knowledge

It is the extent of basis of understanding of the farmers in different aspects of agricultural subject matters i.e. crops, seed, organic-manure, insects and diseases of crops protection technologies etc. It includes the basis of understanding of the use of different agricultural inputs and practices. Agricultural knowledge of a respondent was measured counting agricultural knowledge score.

Individual contact method

Refers for extension teaching method, which involves personal contact through Sub Assistant Agricultural Officer, Agricultural Extension Officer, Companies' representative, Farm and Home visit.

Group contact media

Refers to face-to-face contact with more than one individual through group discussion meeting and meeting at result demonstrations.

Mass contact method

Is employed by extension worker to contact a large number of people through, Agricultural Radio program, and Watching agricultural program in TV, Newspaper, Bulletin, and Poster etc.

Interpersonal contact media

Refers to personal closeness of two or more people in a setting of mutual interest. Interpersonal contact media has very source credibility.

Sub Assistant Agricultural Officer

This is a present employee of the DAE who carries out extension activities with in block located at union level, the lowest stratum of the government administrative unit is responsible for providing extension services to at least contact eighty farmers located in eight sub-block.

Agricultural technologies

Agricultural technologies in respect of cultivation of any crop refer to those practices, which are advocated by some competent authority. These technologies, if used are helpful for improving the yield or quality of the crop.

Recommended variety

A recommended variety is one, which possesses the potential of better performance in respect of yield, quality, insect and diseases resistance etc. as advocated by BRRI. The varieties considered as recommended varieties of rice included BR-3, BR-11, BR-28, BR-29, Hira etc.

Recommended dose of fertilizer

Recommended dose of fertilizer means the dose as recommended by the research institute after a long trial in which a particular dose is added to the soil for supplementing one or more nutrients.

Recommended irrigation

The term irrigation defined as the artificial supply of water in rice field in order to have better rice production.

Plant protection measures

Plant protection measures refer to those measures, which are used to save crop plant from the damage of insects and diseases. The measures included the use of various kinds of pesticides, seed treatment, soil treatment and foliar application of pesticides.

CHAPTER II

REVIEW OF LITERATURE

The purpose of this chapter is to review literature-having relevance to the study. The reviews are conveniently presented based on the major objectives of the study. This chapter is divided into two sections. The first section deals with the findings on the use of communication media by the rice farmers and the second section is devoted to discussion on the findings of studies exploring relationship between the selected characteristics of the rice farmers and their use of communication media.

Section 1: Use of communication media by the rice farmers

Karim (1965) observed in a study of sources for receiving information on cotton cultivation by the cotton growers that almost three fourth (75.50%) of the farmers mentioned neighbors and friends as sources of information which was followed by agricultural magazine (39.50%) and result demonstration (37.50%). The study also revealed that 75.50% of cotton growers used indirect contact media, 30% used group contact, 18.33% used mass contact and 14.72% used individual contact.

Huque (1972) showed from his study of IRRI rice growers of a tube well irrigation project in Thakurgeon that model farmers and the agricultural magazine were the most and the least used information media showing to the highest and 90 and 12% affirmative respondents respectively. Affirmative responses for other information sources were weekly meeting (85%), farm and home visit (75%), neighbor and relative (68%), radio (47%), printed material (33%) film show (24%), office call (21%) and newspaper (16%).

Librero (1974) found his farmers had obtained information from extension worker; radio, other farmers, newspaper, pamphlets, neighbors, television and magazines percentages were 95, 84, 60, 12, 10, 9, 7 and 2 respectively.

Rahman (1974) found in a study that extension agent was consulted by the farmers to the highest extent (99%) which was followed by seeking information from friends (35%), farm and home visit (43%), publication (35%), radio farming programmes (21%), newspaper (43%), result demonstration (8%) and krishi katha (5%).

Ahmed (1977) observed that a great extent of use of information was by group contact (38-72%), than those of mass contact (21.33%) and individual contact (19.61%). It was also found that highest proportion of farmers learned from their neighbors, friends and relatives (94%) was which was followed by progressive farmer (75%).

Opare (1980) showed in a study that farmer received information for cocoa production from friends relatives and extension officer.

Jagne and Patel (1981) found in a study that most of the farmers used radio in receiving information on groundnut cultivation.

Raddy (1982) opined that with the help of new modes of communication like radio and television the research findings can be conveyed to the farmers quickly and in away that makes eligible to them.

Allen (1985) found in a study of families in Low Countries of North Florida in the USA that a greater proportion of farm wives used interpersonal information sources such as family, friends and neighbors whereas a greater proportion of farm husband used interpersonal extension and research based personal information sources.

Samanta (1986) in a study in India found that demonstration was the best credible source of information for the farmers followed by scientists, block extension agency, progressive farmers, television, radio and printed materials.

Kashem and Jones (1988) observed that small farmers had the highest contact with individual sources and the lowest contact with group contacts. Further small farmers had comparatively higher percentages of contact with mass media except for those that needed literacy. Among individual's contacts, small farmers had the highest contacts with ideal farmers and seed fertilizer dealers and relatively little contact with the Block Supervisor (Now Sub Assistant Agricultural Officer).

Singh and Sahey (1990) found that most of the contact farmers received information from progressive farmers and some of them received such information from radio.

Kashem and Halim (1991) in a study on indicated that interpersonal communication media such as friends, neighbors, seed, fertilizers and pesticides dealers are the most reliable and trustworthy sources of agricultural information to the farmers.

Ayaz (1991) in a study in Pakistan, found that radio solved the problem which were inaccessible to other media and that of literacy of farmers. Therefore, needs be used more extensively to disseminate agricultural information to farmers.

Galindo (1994) in his study in Mexico on communication media used by farmers revealed that television and radio were the most widely used communication media and talks, demonstrations and training courses were the preferred for receiving information.

Khan and Paracha (1994) conducted a study in two villages one innovative and other non-innovative in Pakistan among the farmers of a cotton producing

district and reported that the main channel of communication were mass media and interpersonal communication. The mass media were centrally organized and included radio, television and newspaper.

Westoff and Rodriguez (1995) reported in Kenya, about 15% of women neither saw nor heard media message. The preparation rose to 25% among those who have heard radio message, to 40% among those who were exposed to both radio and print messages and to 50% among those exposed to radio, print and TV message of family planning activity. It was opined that mass media could have an important effect on reproductive behavior.

Islam (1995) who conducted a study on women's participation in selected agricultural income generating activities and found mass media like radio, television, printed materials etc. were some of the media, which created awareness and interest among the farmers and their wives to accept improved technology by participating in agricultural income generating activities.

Ullah (1996) found in a study conducted at union level in Gazipur District that the highest extent of use of information sources by the vegetable growers was contact with the block supervisor (67.70%) which was closely followed by radio (61.45%), neighbors (43.23%) friend and relatives (43.23%), and krishi katha was used to the lowest (6.67%) extent. The study also revealed that individual contact was highly used by the respondents followed by mass and group sources.

Halim and Miah (1996) conducted a study and found that the women of modern villages with higher socio-economic status used more cosmopolite media information rather than localite media. Cosmopolite media included radio, television, extension agents etc. among the mass media they used radio and television as a vital sources of information. Radio was very frequently (69.7%) used by all categories of farmwomen while TV was used by less number of women (26.9%).

Rahman (1996) conducted a study at Sherpur Thana of Bogra District supported that vegetable growers received maximum information from neighbors, friends and relatives, which was followed by radio farm progrmme and discussion with block supervisor. The study also revealed that use of individual sources by farmers was highest (64.65%) while use of mass sources ranked second (22.93%) and use of group sources ranked third (12.42%) in position.

Mia *et al.* (1997) observed that 65 % of the farmers used individual media and while 17% of the farmers used group and mass media for agriculture information. He further reported that the resource poor farmers used localite sources whereas the resource rich farmers used cosmopolite sources for getting information.

Egbule and Njoku (2001) in their study on mass media for adult education in Nigeria found that mass media have performed poorly in disseminating requisite agricultural information to farmers.

Nuruzzaman (2003) in his study revealed that 79.43% of the respondent had medium use, 9.34 % had low use and only 11.21% had high use of mass media. Preference of mass media varied for different technologies. Television was found to have first preference followed by radio, agricultural fair, folk song and poster respectively by the farmers.

Anisuzzaman (2003) in his study concluded that neighbours, friends and relatives media was used by 13.64, 15.60 and 16.01 % of the farmers for getting information about recommended variety of rice, recommended dose of fertilizer and plant protection measures respectively. Radio was used as a powerful medium for getting information. Progressive farmers and contact farmers were found as frequently used communication media. TV, result demonstration and printed

materials were also used as important media for communicating agricultural information. But the least used media were newspaper and field tour.

Alam (2004) in his study observed that the highest extent of media were used for modern varieties (rank one) and it was followed by pest management practices (rank two) and recommended seed rate (rank three) recommended irrigation (rank four) and recommended fertilizer does (rank five).

Section 2: Relationship between selected characteristics of the farmers and their use of communication media on rice production technologies

Age

Karim (1969) in this study indicated that the age levels had certain degree of influence upon the rice growers in using the information source; the relationship however, was found to be statistically insignificant.

Latif (1974) observed that there was no relationship between age of farmers and their information sources.

Roy (1981) in his study indicated that the age of the small income farmers had no significant effect in using information media on the use of balanced dose of fertilizer.

Bhuiyan (1988) identified in his study that there was a negative effect of the age of rice growers on the use of information media in the adoption of farm practices in rice cultivation.

Islam (1995) found that the age of the farmers had negative and significant relation with the use of communication media.

Rahman (1996) undertook an investigation on communication behaviour on winter vegetable growers at Sherpur Thana of Gazipur district. The reported that age had no to negligible relationship with communication behaviour.

Khan (1996) concluded that age of the farmers had a negative and insignificant effect on the use of information media.

Ullah (1996) observed that age of farmers showed a negative but not significant relationship their extent of use of different information media.

Islam (1998) observed that there was no significant relationship between age of the farmers and their opinion on the effectiveness of Mati-O-Manush, Television program in disseminating agricultural information.

Khalil (1998) observed that no relationship existed between age of farmers and their extent of use of information sources.

Anisuzzaman (2003) observed that age of the respondents have no significant relationship with their use of communication media.

Education

Sawhney (1967) indicated that with increasing level of education there was increasing use of personal cosmopoliteness and mass media sources and diminishing use of localite sources.

Dhande (1982) observed that education of the respondents was positively and significantly related to information sources utilization score.

Kadam and Sabale (1983) observed in study that educational level of sugarcane growers showed statistically significant association with the extent of use of communication media.

Kashem and Jones (1988) found in their study that education of the small farmers rendered significant positive correlation with their contact with information sources.

Hossain and Crough (1992) showed that there existed positive relationship between education of the farmers and their use of mass media.

Nahar (1995) observed that the level of literacy of the farmwomen had positive significant relationship with their usefulness of agricultural radio program.

Ullah (1996) concluded in his study that education of the vegetable growers had positive and highly significant relationship with their use of information sources. This means that the more the education of the farmers more was the use of information sources for vegetable cultivation.

Islam (1998) observed that the level of education of the farmers had a significant positive relationship with their use of communication media.

Anisuzzaman (2003) found that education of the respondent had significant positive relationship with their use of communication media.

Farming experience

Sarker (1995) in his study observed that farming experience had no relationship with their use of communication media for receiving agricultural information.

Al-Amin (1997) observed that farming experience of the farmwomen had no significant relationship with their communication exposure.

Islam (1998) observed that rice-farming experience of the farmers had no significant influence on the use of communication media.

Khalil (1998) observed that there was no relationship between farming experience and use of information sources.

Farm size

Miah (1971) concluded that land ownership had little bearing upon the rate of use of recommended practices by the rice and banana growers of Dhaka districts.

Hooda (1987) found that land holding of the farmers had positive significant correlation with the communication behaviour.

Bhuiyan (1988) found that the farm size of farmers had positive and significant effect on the use of communication media.

Islam (1995) found that farm size of the farmers had a positive and significant relationship with their use of communication media.

Sarker (1995) in his study concluded that farm size of the respondents had a positive and significant relationship with their use of communication media.

Ullah (1996) mentioned in his study that farm size had no significant relationship with the use of information media by the vegetable growers.

Al-Amin (1997) observed that farm size of the rural women had no significant relationship with their communication exposure.

Khalil (1998) found that there was a positive and significant relationship between farm size and use of information sources.

Anisuzzaman (2003) observed that farm size of the respondents had no significant relationship with their use of communication media.

Organizational participation

Sawhney (1967) observed in his study that farmers who were more actively participating in formal organizations used more cosmopolite sources and less localite source than those who were participating less actively.

Hossain (1971) study revealed a positive relationship of organization participation of the farmers with each of four selected improved farm practices, namely recommended variety of paddy, recommended of fertilizer, plant protection measure and lines transplanting method.

Beal and Sibley (1977) concluded that there was a positive relationship between participants of organization behaviour and use of agricultural technology.

Bhuiyan (1988) indicated in his study that the relationship between organizational participation and the use of information media was not significant.

Islam (1995) in his study on wheat growers found that organizational participation of the farmers had positive and significant relationship with their use of communication media.

Rahman (1996) found that organization participation of the winter vegetable growers had moderate association with their use of different information sources.

Ullah (1996) observed that organizational participation of farmers had no significant relationship with the use of information media by the vegetable growers.

Cosmopoliteness

Chauhan and Sinha (1979) indicated in a study on effectiveness of Television and its combination in transferring technological know-how to farmers that the cosmopoliteness of the farmers and gain in knowledge was significantly correlated.

Bhuiyan (1988) in a study observed that the relationship between cosmopoliteness of the farmers and the use of information media was not significant.

Uddin (1993) showed that was no relationship between the cosmopoliteness of the sugarcane growers and their reception of information in sugarcane cultivation.

Ullah (1996) in a study observed that cosmopoliteness of farmers had significant and positive relationship with their extent of use of information sources.

Rahman (1996) concluded that cosmopoliteness of winter vegetable growers had moderate association with their use of different information sources.

Khalil (1998) found that cosmopoliteness of the respondents had positive significant relationship on their use of information media.

Anisuzzaman (2003) found that cosmopoliteness of the respondents had positive significant relationship with use of communication media.

Innovativeness

Latif (1971) in his study showed that there was a strong positive relationship between innovativeness of the farmers and their information exposure.

Kashem and Halim (1991) showed in their study that the use of information media in the adoption of modern rice technologies by their rice growers had significant positive correlation with in innovativeness.

Ullah (1996) observed that innovativeness of the respondents showed no significant relationship with their use of information media.

Al-Amin (1997) observed that innovativeness of the farmwomen had significant positive relationship with their communication exposure.

Agricultural knowledge

Kashem and Halim (1991) showed in their study that the use of information media by the rice growers in the adoption of modern rice technologies had significant positive correlation with agricultural knowledge.

Islam (1995) in his study observed that agricultural knowledge of the farmers had positive and highly significant relationship with their use of communication media.

Parveen (1995) found that mass media exposure of the respondents had a positive significant relation with their agricultural knowledge.

Khan (1996) found there was a highly significant and strongly positive relationship between agricultural knowledge of the farmers and their use of information sources.

Alamin (1997) showed that agricultural knowledge of the farmwomen had significant relationship with their communication exposure.

Anisuzzaman (2003) observed that agricultural knowledge respondents had positive significant relationship with their use of communication media.

Conceptual framework of the study

In this study communication exposure of the farmers was considered as dependent variable-and selected characteristics of the farmers was considered as independent variable. The conceptual framework of the study has been presented below.

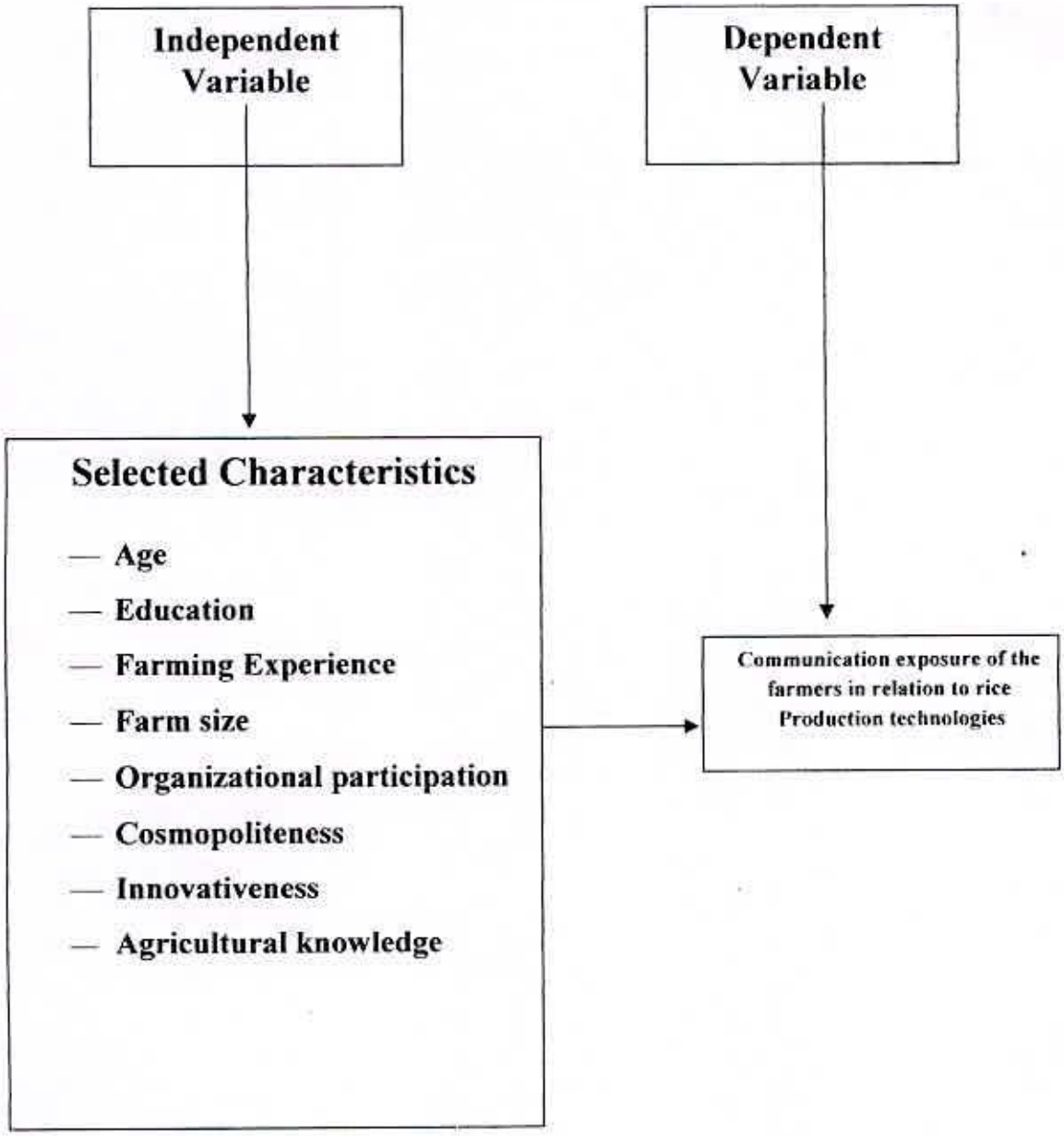


Figure 1. Conceptual Framework of the study

CHAPTER III

MATERIALS AND METHODS

Methodology is very important in conducting any research. The researcher took utmost care in using appropriate techniques through out the whole study. He had followed in collecting valid and reliable data and to analyze and interpret those data to arrive at correct conclusions. This methods and procedures followed in conducting this study are discussed in this chapter.

Locale of the study

Damodar union of Phultala Upazila under Khulna district was purposively selected because it was an intensive rice production area. The study area consists of six villages. Out of six, two villages (Damodar and Garakhola) were selected by following simple random sample technique. These two villages constituted the locale of the study.

Population of the study

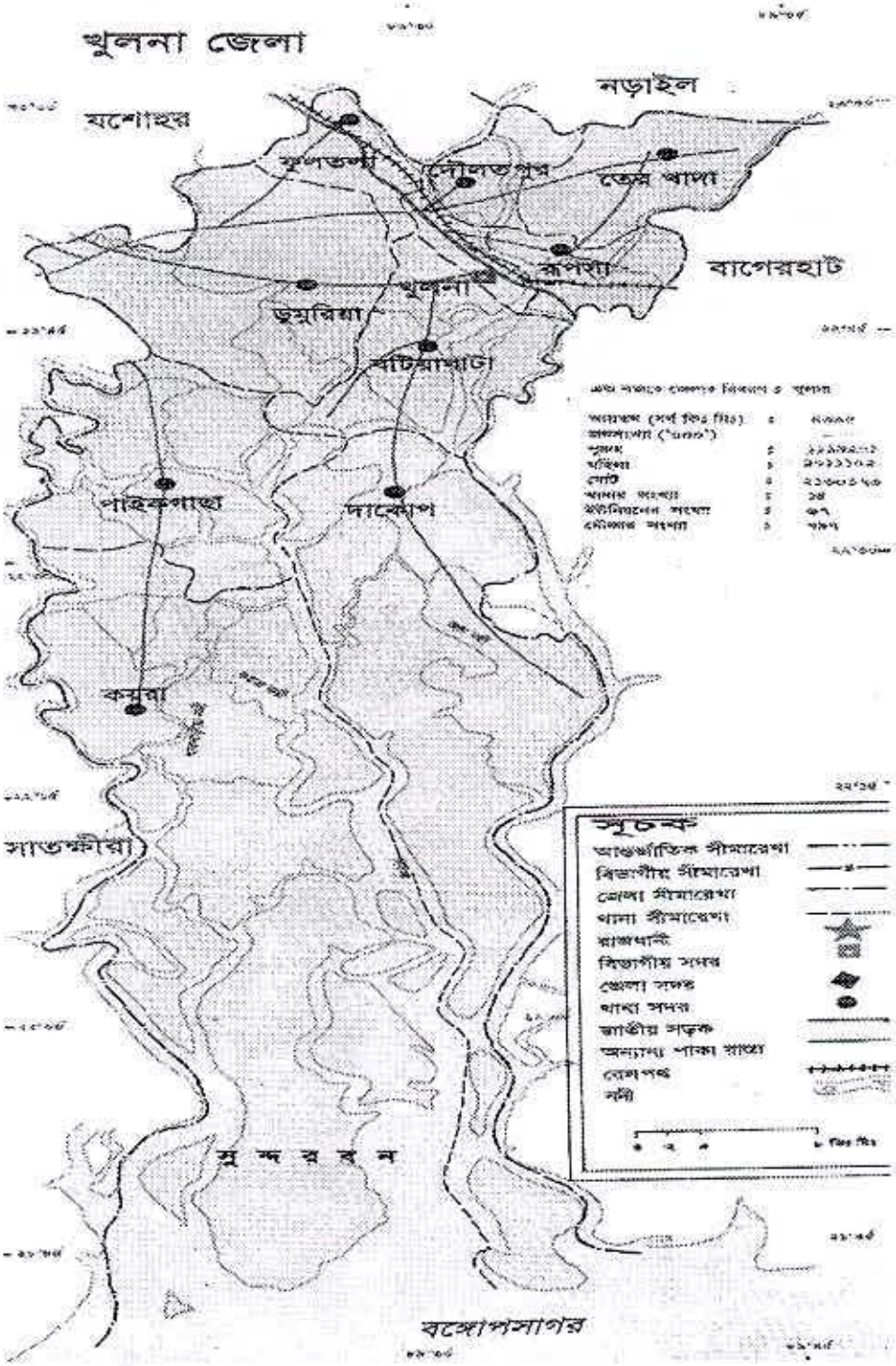
Out of six villages of Damodar union Damodar and Grarokhola were selected random sample technique. All the rice farmers of the selected villages were the population of the study.

Design of the study

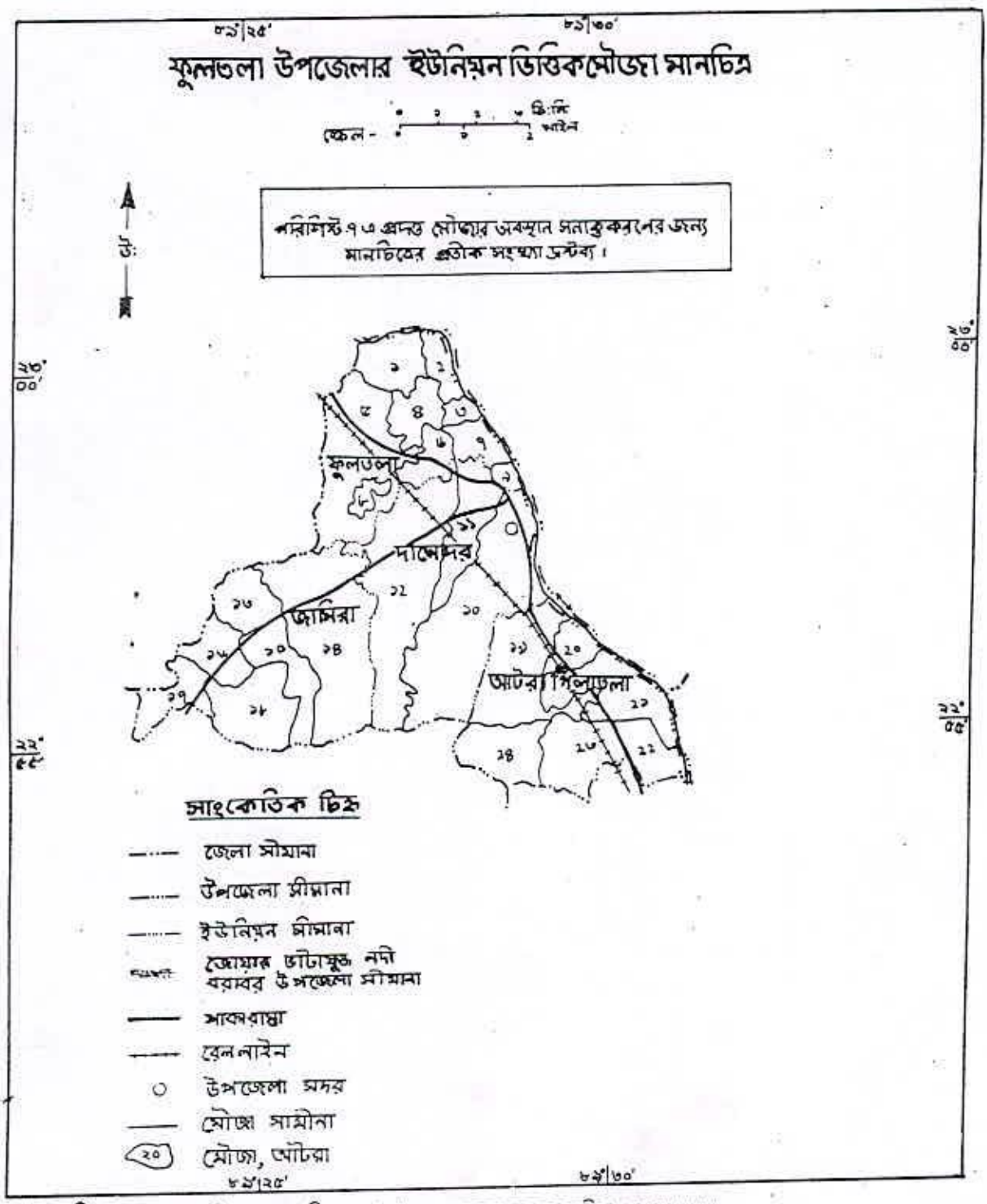
The research design of the study was a descriptive survey research. That is the study was designed to describe the pattern of communication exposure by rice farmers and to find out the affecting the extent of use of communication media. Efforts were also made to identify the problems faced by farmers in having for information in producing rice.

Sampling procedure

An updated list of all the rice growers of the selected villages were prepared with the help of Sub Assistant Agricultural Officer of Damodar union and local leader of Damodar union. The total number of farm families in these


খুলনা জেলা
নড়াইল
যশোহর
ফুলতলী
দৌলতপুর
তেরখাদা
রূপসা
বাগেরহাট
খুলনা
ডুমুরিয়া
বটিয়াঘাটা
পাইকগাছা
দাকোপ
কয়রা
সাতক্ষীরা
সূচক
আন্তর্জাতিক সীমারেখা
বিভাগীয় সীমারেখা
জেলা সীমারেখা
থানা সীমারেখা
রাজধানী
বিভাগীয় সদর
জেলা সদর
থানা সদর
জাতীয় সড়ক
অন্যান্য পাকা রাস্তা
রেলপথ
নদী
সুন্দরবন
বঙ্গোপসাগর

ফুলতলা উপজেলার ইউনিয়ন ভিত্তিক মৌজা মানচিত্র



উৎস: ডি,এল,আর মানচিত্র (সংশোধিত ১৯৫৪) এবং জেলা রাজস্ব অফিস, খুলনা, ১৯৮৭।

Villages were 800. One hundred rice farmers (12.5%) were selected from the population through systematic random sample technique (Table 1). A reserve list of 12 farmers was also prepared, so that the farmers of this list could be used for interview if any farmer in the original sample was not available during the collection of data.

Table 1. Distribution of population sample of rice growers in two villages of Damador union

Sl. No.	Name of village	Population of rice growers	Number of rice growers included in the samples	Number of rice growers included in reserve list
1.	Damador	475	60	7
2.	Garakhola	325	40	5
	Total	800	100	12

Variables of the study

In descriptive survey research, the selection and measurement of variables constitute and important task. A research hypothesis contains at least two elements, independent variable and dependent variable. An independent variable is the factor, which is manipulated by the experiments to ascertain its relationship to an observed phenomenon. A dependent variable is the factor, which appears, disappears or varies as an effect of the independent variables.

Selection of dependent variable

Communication exposure of the farmers in relation to in rice production technologies was the dependent variable of the study. Various communication media used by the farmers in receiving information on various aspects of rice production technologies. In this study only four aspects of rice production technologies were consider these are—

i) Recommended modern varieties

ii) Recommended dose of fertilizer

iii) Plant protection measures

iv) Recommended irrigation

The above-mentioned aspects of rice production technologies were components of dependent variable of the study. The communication media such as individual, group, mass and interpersonal contact media were included in measuring the communication exposure by the farmers.

Measurement of dependent variables:

The communication exposure score of a respondent was obtained adding weight in all the 15 media. Extent of use of each communication media measured on a three point rating scale of 0 to 2. Thus communication exposure score of a respondent would range 0-30. 0 indicated no exposure and 30 indicated very high exposure.

Table 2. Measurement of dependent variables

Communication media	Assigned score
Sub Assistant Agricultural Officer (S.A.A.O.) Agricultural Extension Officer (A. E. O.) Upazila Agricultural Officer (U.A.O.) Companies Representative Farm and Home Visit	0 = Not at all 1 = Occasionally 2 = Frequently
Group Discussion Meeting Meeting at Result Demonstration	0 = Not at all 1 = Occasionally 2 = Frequently
Radio Television Newspaper	0 = Not at all 1 = Occasionally 2 = Frequently
Progressive Farmer Friends Neighbors and Relatives Seed Dealer Fertilizer Dealer	0 = Not at all 1 = Occasionally 2 = Frequently

Selection of independent variables

For selection of independent variables the researcher went through the past related literature as far as possible and had discussion with the faculty members experts, researchers and related fields. He also carefully observed the farmers' behaviour and socio-economic conditions of the villages. Considering the various relevant factors he ultimately selected eight characteristics of the rice farmers as independent variables of this study. These variables included: age, education, farming experience, farm size, organizational participation, cosmopoliteness, innovativeness and agricultural knowledge.

Measurement of independent variables

Age

Age of farmers was determined by the number of years from their date of birth to the date of interview. A score of one was assigned for each and every complete year of a farmer's age. Since Bangladeshi rural people actually do not keep record of their date of birth, age was some times based on arbitrary estimates.

Education

Education was measured in terms of years of schooling completed by an individual in educational institutions the education score was computed for each respondent by giving one point for each year of successful schooling completed. The person who can sign only he was given score 0.5 and who does not reading and writing scored 0.

Farming Experience

Farming experience of a farmer was determined on the basis of his involvement in farming activities related to agriculture. A score of one was assigned to one year of farming experience, score two for two years of farming experience and so on.

Farm size

This term refers to the cultivated area of either owned by a farmer or cultivated on borga, the area being estimated in terms of full benefit to the farmer. The right of farmer on the land taken on lease from others was considered as ownership in estimating their farm size. Farm size of a farmer was measured by using the following formula:

$$\text{Farm size} = A1 + A2 + \frac{1}{2}(A3 + A4) + A5 + A6$$

Where, A1 = Homestead area of a farmer

A2 = Cultivated area owned by a farmer

A3 = Cultivated area given to others on borga system

A4= Cultivated area taken by farmers to others on borga system

A5 = Cultivated area taken by a farmers from others on lease system

A6 = Others

Organizational participation

Organizational participation score of respondent was measured on the basis of his participation in different organizations related to agriculture and rural development in the past and also at the present time.

The nature of organizational involvement of the farmers was quantified in the following manner:

Nature of involvement	Score
a) No participation	0
b) Ordinary member	1
c) Executive member	2
d) President / Secretary	3

Organizational participation score was obtained by adding the score was for the participation in all organization.

Cosmopoliteness

Cosmopoliteness is defined as a person's orientation outside his social system. A cosmopoliteness score was computed for each respondent on the basis to six different types of places. The scale used for computing the extent of cosmopoliteness was 'not at all', 'occasionally' and 'frequently' and the weights assigned for these scales were 0, 1 and 2 respectively. The weights obtained for visits to each of the six categories of places were added together to obtain the cosmopoliteness score of respondent. Cosmopoliteness score of a respondent could range from 0-12. 0 indicated no cosmopoliteness and 12 indicated maximum cosmopoliteness.

Innovativeness

The term innovativeness referred to the degree to which an individual is relatively earlier in adopting new ideas than the other members of a social system (Rogers-1993). Innovativeness of a respondent was measured on the basis of the adoption of five improved agricultural practices by the respondents. Score was assigned on the basis of length of time a respondent was using the practices. The scoring was done in the following way.

Adoption period	Assigned weights
Never used	0
For less than 1 yrs	4
For less than 2 yrs	3
For 2 to 3 yrs	2
For 4 yrs or above	1

Thus the innovativeness score of a respondent was obtained by adding the weights for all 5 items. Innovativeness score of a respondent could range from 0-20. 0 indicated no innovativeness and 20 indicates maximum innovativeness.

Agricultural knowledge

It referred to the knowledge gained by the farmers from different sources and also through their experience of farming. The farmers were asked 15 questions on different aspects of agriculture. The total assigned score all the questions was 50. A respondent answering a question correctly obtained full score, while for wrong reply obtained zero. The total score obtained by respondent was taken as the agricultural knowledge score of the respondents. Agricultural knowledge score of respondents could range from 0-50. 0 indicated no knowledge in agriculture and 50 indicated high knowledge.

Instrument for data collection

An interview schedule was prepared for collection of data in accordance with the objectives of the study. Both open and closed form, simple and direct questions were included in the schedule.

The interview schedule initially prepared was pre tested by administering the same to 10 farmers in the study area. The pretest helped the researcher to examine the suitability of different questions and statements of the draft schedule. Necessary corrections, additions, alterations and rearrangements were made in the schedule on the basis of experience of the pretest. The final version of the instrument was developed for collecting data from the intended responds.

Data collection procedure

Data were collected by the researcher himself with the help of Sub-Assistant Agricultural Officer through interview schedule. To get valid and relevant information, the researcher made all possible efforts to explain the purpose of the study to rice farmers. Sub-Assistant Agricultural Officer and local opinion leaders helped the investigator in this regard. Appointments with the interviewers were made in advance with the help of the concerned Sub-Assistant Agricultural Officer. While starting interview the researcher took all possible care to establish rapport with him, so that the rice farmers did not feel hesitation to furnish proper data. The researcher received excellent co-operation from the respondents during the time of interview the entire process of data collection took 28 days from February 1 to February 28 in 2006.

Data processing and analysis

Data collected from the respondents were compiled, tabulated and analyzed in accordance with the objectives of the study. Various statistical measures such as number, percentage distribution, range, average, rank order and standard deviation were used in describing data. The SPSS (Statistical Package for Social Science) program was used to analyze the data. Co-efficient of correlations were calculated to explore the relationship between the selected characteristics and the extent of use of communication media. Throughout the study, 0.01 level of probability with an accompanying 99-percentage confidence level was used as the basis for rejecting or accepting null hypothesis.

CHAPTER IV

RESULTS AND DISCUSSION

This chapter deals with the findings of the research. It is divided into three sections the first sections deals with the selected personal, economic and social characteristics of the farmers. The second section deals with the extent of use of communication media by the farmers in receiving information on rice production technologies. The third section deals with the relationship between the individual characteristics and communication exposure of the farmers in relation to rice production technologies.

Section 1: Selected characteristics of the farmers

There are many interrelated and constituent attributes of farmers, which largely determine their personal social and economic conditions. In view of this consideration it was assumed that the communication exposure by the farmers in receiving information on rice production technologies might be influenced by these characteristics of individual farmer. It becomes therefore, very much essential to study some of these individual characteristics like age, education, farming experience, farms size, organizational participation, cosmopoliteness innovativeness and agricultural knowledge. Their mean, standard deviation and range are shown in Table (3).

Table.3. Mean, standard deviation and range of the selected characteristics of farmers in rice production technologies in two villages in Khulna district.

Independent variables	Range		Mean	Standard deviation
	Minimum score	Maximum score		
Age	22	75	39.1	13.63
Education	0	14	7.523	3.93
Farming experience	04	50	17.84	11.24
Farm size	0.04	5.6	1.15	0.94
Organizational participation	0	8	1.51	1.737
Cosmopoliteness	1	12	5.83	2.54
Innovativeness	7	20	13.44	4.18
Agricultural knowledge	23	47	38.15	6.08

Age

The age of the rice farmers ranged from 22 to 75, the mean being 39.1 years and the standard deviation 13.63. The rice growers of the study group were classified into three categories on the basis of their age. Distribution of the farmers according to their age has been shown in table 4.

Table 4. Distribution of the farmers according to their age

Categories	Age level	Number	Percent
Young	Up to 35 years	45	45
Middle	36-50 years	31	31
Old	51 and above	24	24
Total		100	100

Data contained in Table 4 revealed that the highest proportion (45%) of the farmers were in the young age category compared with to 31% being middle and 24.0% being of old age.

Education

Education scores ranged from 0 to 14. The mean being 7.52 and the standard deviation 3.93. Based on their level of education, the farmers were classified into five categories as shown in Table 5.

Table. 5. Distribution of farmers according to their education

Categories	Level of education	Number	Percentage
Don't know reading or writing	No education	5	5
Can sign only	0.5	7	7
Primary level of education	I-V	23	23
Secondary level of education	VI-X	45	45
Higher secondary and above	XI-XIV	20	20
Total		100	100

Data shows in Table 5. Indicated that the highest proportion (45%) of the farmers had secondary education followed by primary education (23%) and no education level (5%).

It was evident that (88%) of the respondents had education of various level from primary to above secondary level and about (5%) of the respondents had no education and only (7%) of the respondent only can sign. It could therefore, be apprehended that a considerable proportion of farmers had to face difficulty in using communication exposure in case of rice production technologies.

Farming Experience

Farming experience of farmers ranged from 4 to 50 years. The mean being 17, 8.4 with a standard deviation of 10.48. Based on their farming experience the farmers were classified into three categories as shown in table 6

Table. 6. Distribution of farmers according to their farming experiences

Categories	Scores	Number	Percentage
Low farming experience	Up to 5 years	13	13
Medium farming experience	6-20 years	60	60
High farming experience	21 and above	27	27
Total		100	100

Data contained in Table. 6. Revealed that the highest proportion (60%) farmers in the study group had medium farming experience, while 27% had quite a good number of years of farming experience only 13% farmers had low farming experience. It seems that they had a wide difference in farming experience.

Farm size

Farm size in the study area was found to vary from 0.04 to 5.6 ha. The mean farm size was 1.15 ha with standard deviation 0.94.

Table. 7. Distribution of the farmers according their farm size (in ha)

Categories	Score	Number	Percentage
Marginal	0.04-0.40	12	12
Small	0.41-1.00	51	51
Medium	1.01 to 2.5	28	28
Large	2.51 and above	9	9
Total		100	100

Table 7. Indicated that the highest proportion (51%) of the farmers had small size farm compared to 9% having small farm size, 12% having marginal and 28% having medium sized farm.

Organization Participation

The computed organizational participation scores of the farmers ranged from 0 to 24 with the mean score being 1.51 and standard deviation 1.737.

Table 8. Distribution of farmers according to their organizational participation

Categories of participation	Score	Number	Percentage
No participation	0	40	40
Low participation	1-2	34	34
Medium participation	3-4	21	21
High participation	5 & above	5	5
Total		100	100

The findings showed in table 8 that highest proportion (40%) of the farmers had no participation in any organization compared to 34% having low participation 21% having medium participation and only 5% had high participation.

Cosmopoliteness

The range of computed cosmopoliteness scores of the farmers was 1 to 12 against the possible range of 0-12. The mean score was 5.83 with the standard deviation of 2.54. Based on computed scores the respondents were classified into three categories as shown in Table 9.

Table 9.Distribution of farmers according to their cosmopoliteness.

Categories	Score	Number	Percentage
Low	1-4	28.00	28.00
Medium	5-8	52.00	52.00
High	9-12	20.00	20.00
Total		100	100

The findings show in table 9 that the highest proportion 52% of the farmers had medium cosmopoliteness compared with 28% having low cosmopoliteness and 20% high having cosmopoliteness.

Innovativeness

The computed innovativeness scores of the farmers ranged from 7-20 against the possible range 0-20 with the mean score 13.44 and standard deviation 4.18.

Table 10. Distribution of farmers according to their innovativeness

Categories	Score	Number	Percentage
Low	Up to 11	29	29
Medium	12-16	50	50
High	17-20	21	21
Total		100	100

Analysis of data shown table 10 indicated that the highest proportion (50%) of the respondents had medium innovativeness compared with 29% having low and 21% having high innovativeness.

Agricultural knowledge

It was found that agricultural knowledge of the farmers ranged 23-47 against the possible range from 0-50. The mean of agricultural knowledge 38.15 and standard deviation 6.08. The respondents were classified into three categories on the basis of agricultural knowledge.

Table 11. Distribution of farmers according to agricultural knowledge

Categories	Score	Number	Percentage
Low	Up to 35	23	23
Medium	36-42	59	59
High	43-50	18	18
Total		100	100

Findings shows in table 11 that major portion of the respondents 59% had medium agricultural knowledge while 23% had low and 18% having high agricultural knowledge. From these findings we can say that use of communication exposure helps to increase knowledge.

Extent of use of communication exposure of farmers in receiving information on rice production technologies

Use of 15-selected communication media was investigated in this study. Extent of use of the different communication media was measured according to the Media Used Index (MUI).

A Media Use Index (MUI) was computed for each medium to measure the extent of its use more accurately in table on the basis of their communication media-use index (MUI).

Table 12. Rank order of communication media used by farmers in receiving information on rice production technologies.

Communication media	MUI	Rank order
1. Sub-Assistant Agricultural Officer	616	1
2. Fertilizer dealer	535	2
3. Television	525	3
4. Group discussion meeting	460	4
5. Neighbors and Relatives	429	5
6. Progressive farmer	362	6
7. Friends	309	7
8. Newspaper	249	8
9. Agricultural Extension Officer	244	9
10. Meeting at result demonstration	238	10
11. Radio	163	11
12. Farm and home visit	146	12
13. Upazila Agricultural Officer	127	13
14. Seed dealer	99	14
15. Company representative	35	15

Among the selected media Sub Assistant Agricultural Officer was identify as the highest communication media with a frequency of 616 and it was closely followed by fertilizer dealer (535), watching agricultural program in TV (525), group discussion meeting (460), neighbors and relatives (429), progressive farmer (362), friends (309), reading daily newspaper (249), agricultural extension officer (244), meeting at result demonstration (238), agricultural radio program (163), farm and

home visit (146), Upazila Agricultural Officer (127), seed dealer (99) and companies representative (35).

Thus it was revealed that the role of sub assistant agricultural officer, fertilizer dealer, neighbors and relatives, progressive farmers and friends were much greater than others media for diffusion of innovation among the farmers of Damador union. Actually personal localite media play important role in case of receiving information on rice production technologies. This is also revealed in the present study.

Among the mass media Television ranked third and dominated consistently over all media in case of receiving information on rice production technologies. Thus television seems to be a powerful medium in the mass contact method. Newspaper and Radio have been ranked as eight and eleventh respectively.

Among group contact method, group discussion meeting and meeting at result demonstration have been ranked as fourth and tenth respectively. This indicates that these two media were very useful in diffusion of message related on rice production technologies to the farmers.

Agricultural Extension Officer (AEO), farm and home visit and Upazila Agricultural Officer had moderate level of role in case of receiving information on rice production technologies. But the least used media used as seed dealer and companies representative.

Ullah (1996) found that contact with block supervisors (Now-Sub Assistant Agricultural Officer) was the highest used information media and it was closely followed by radio, neighbors and friends. But Rahman (1996) reported that friends and relatives were used to the highest extent and it was followed by neighbors, radio and block supervisor (Now-Sub Assistant Agricultural Officer). The graphical representations of Media Used Index (MUI) of different communication media are shown (Fig 3).

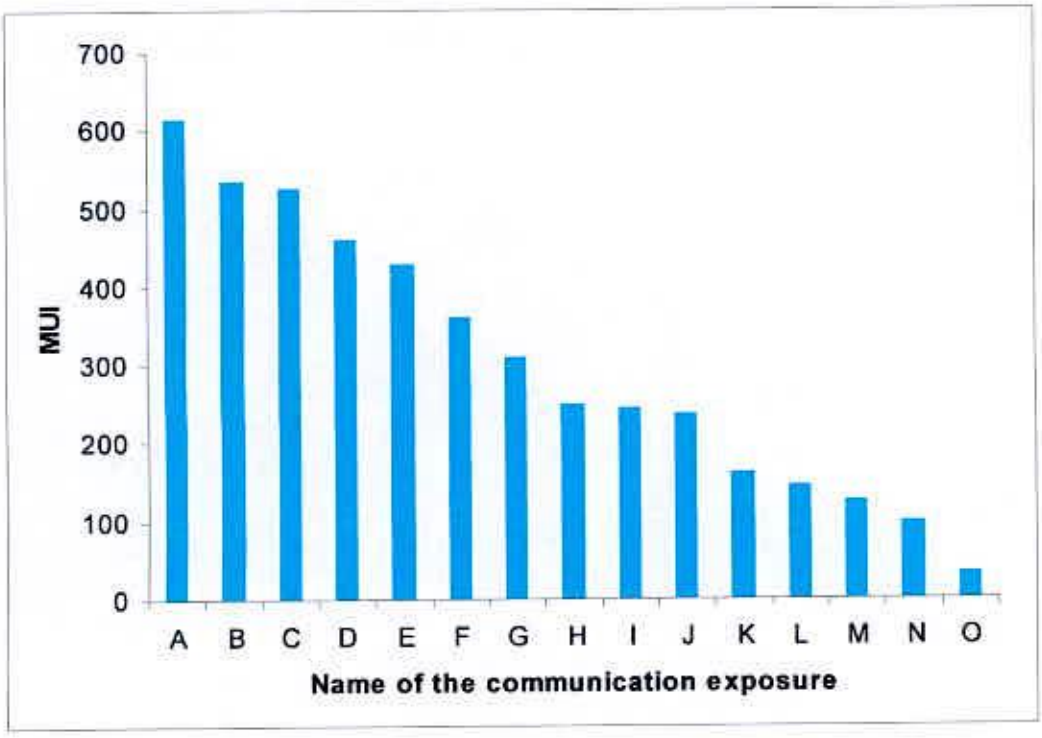


Fig 3: Graphical representation of MUI of different communication media according to rank order

A= Sub-Assistant Agricultural Officer

B= Fertilizer dealer.

C= Television

D= Group discussion meeting

E= Neighbours & Relatives

F= Progressive farmers

G= Friends

H= Newspaper.

I=Agricultural Extension officer (A.E.O.)

J= Meeting at result demonstration

K= Radio

L= Farm & Home visit

M= Upazila Agricultural Officer (U. A. O.)

N= Seed dealer

O=Company representative (C. R.)

Relationship between selected characteristics of farmers and their use of communication exposure

The purpose of this section is to examine the relationships of eight selected characteristics of the farmers with their extent of use of communication media in receiving information on rice production technologies. The selected characteristics of the farmers include age, education, farming experience, farm size, organizational participation, cosmoploiteness, innovativeness and agricultural knowledge.

Each of the above characteristics constituted independent variable while extent of use of communication media by the farmers in receiving information on rice production technologies was the only dependent variable in this study. The relationship has been presented in table.

Table 13. Co-efficient of correlation showing the relationship between the use of communication exposure and selected variables.

Sl. No.	Dependent variable	Independent variable	Co-efficient of correlation	Tabulated value of r with 98 df and		
1.	Extent of	Age	- 0.234*	0.05 level	0.01 level	0.001 level
2.	communication	Education	0.343***			
3.	exposure on	Farming Experience	- 0.408 ***			
4.	rice production	Farm size	- 0.021 NS	0.196	0.257	0.326
5.	technologies	Organizational participation	0.135 NS			
6.		Cosmopoliteness	0.317**			
7.		Innovativeness	0.057 NS			
8.		Agricultural knowledge	0.296**			

* Correlation is significant at the 0.05 level

** Correlation is significant at the 0.01 level

*** Correlation is significant at the 0.001 level

NS Non significant

Age and communication exposure:

The computed value of 'r' = - 0.234 showed a negative and significant relationship between the age of farmers and their extent of communication exposures. Therefore, the null hypothesis was accepted and it was concluded that negative relationship existed between age of farmers and their extent of communication exposure. This findings that the more age of the farmers the less communication exposure of the farmers on rice production technologies.

Similar findings were revealed by Latif (1974) Bhuiyan (1988), Galindo (1994), Sarker (1995) Islam (1995), Khan (1996), Rahman (1996), Islam (1998), Khalil (1998), Anisuzzaman (2003) in their irrespective studies. This all of the studies bear a consistency in the findings with that of present one.

Education and communication exposure:

The computed value 'r' was 0.342, which showed a positive and significant relationship between the education of the farmers and their communication exposures. Therefore null hypothesis was rejected and there was a positive relationship between education and their communication exposure in having information on rice production technologies. This concluded that the more education of the farmers the more communication exposure of the farmers in relation to rice production technologies. The educated persons used to have frequent contact with TV, Radio, progressive farmer, newspaper, Upazila Agricultural Officer and are exposed to various external sources which increase their power of understanding compared to the individual with less educational back ground similar findings were also found by Karim (1965), Ahmed (1977), Kashem and Jones (1988), Islam (1995), Nahar (1996), Ullah (1996), Al-Amin (1997), Khalil (1998), Anisuzzaman (2003) in their studies.

Farming experience and communication exposure:

The r-value between farming experience and their use of communication exposure was -0.40841. The value is significant and negative in trend of relationship. Therefore, the null hypothesis was rejected and concluded that there was negative and significant relationship between farming experience and their communication exposure.

Al-Amin (1997) and Khalil (1998) found similar relationship.

Farm size and use of communication media:

The r-value between farm size and their communication exposure was -0.0208. The value is insignificant and negative in trend of relationship. Therefore, the concerned null hypothesis could not be rejected and it was concluded that no significant relationship existed between farm size of the respondents and their extent of communication exposure. This implies that irrespective of their farm size, all respondents are almost similar in using communication exposure in receiving information in case of rice production technology.

Ullah (1996) found the similar relationship.

Organizational participation and communication exposure:

The computed 'r' value was 0.135. The value showed a positive but insignificant relationship between organizational participation and communication exposure.

Therefore, the null hypothesis could not be rejected and it was concluded that no significant relationship existed between organizational participation of farmers and use of communication exposures rice production technologies. So all farmers were more or less similar in respect of their extent of communication exposures and irrespective of their organizational participation.

Similar findings were found by Dhande (1982), Bhuiyan (1988), Ullah (1996) Al-Amin (1997) and Anisuzzaman (2003).

Cosmoploiteness and communication exposure:

The computed 'r' value was 0.317. The value showed a positive and significant relationship between cosmopoliteness and communication exposure.

Therefore, the null hypothesis was rejected and it was concluded that the cosmopoliteness of the respondents had positive significant relationship with their communication exposure. A cosmopolite person communicates with different external sources. He used to visit his own union, other Upazila and important places. This helps to be exposed to different media.

Similar findings were found by Uddin (1993), Ullah (1996), Annisuzzaman (2003).

Innovativeness and communication exposure:

The computed value of 'r' between innovativenes and communication exposures was 0.057. The value indicated positive but insignificant relationship between innovativeness of farmers and their communication exposures.

Therefore, the null hypothesis could not be rejected and concluded that no relationship existed between innovativeness of farmers and their extent communication exposures.

This implies that irrespective of their innovativeness all the respondents are almost similar in using information media.

Ullah (1996) and Al-Amin (1997) found the similar findings.

Agricultural knowledge and communication exposure:

The computed value 'r' was 0.296. The value showed positive and significant relationship between agricultural knowledge and communication exposures.

Therefore, the null hypothesis is rejected and it was concluded that the Agricultural Knowledge of the respondents had positive significant relationship with communication exposure.

The farmers who have more knowledge of modern agricultural technology related to rice production they will use more communication media.

Similar findings were found by Parveen (1995), Islam (1995), Mondol (1995), Khan (1996), Al-Amin (1997) and Anissuzzaman (2003).

CHAPTER V

SUMMARY, CONCLUSION AND RECOMMENDATION

SUMMARY

Bangladesh is mainly an agricultural country and agriculture is the main occupation of her people. Agriculture provided many people of their occupation and plays a vital role to the GDP of the country. Rice is our staple food. Rice is also our main crop. But we are facing food shortage since our independence due to our over population and lack of sufficient technology. Due to lock of proper communication exposure and economic condition, technology can't reach the farmers. This gap between new technology and communication exposure should be avoided and by this food shortage became over come. But actually farmers do not get proper technology through proper communication exposure. In fact transfer of proper technology is a gigantic task. It involves many interrelated process. The use of communication exposure is one of the most important ingredients through this process. To disseminate new agricultural technology to millions of farmers in the country, effectively flow of scientific information should be required urgently. In view of the importance of the communication exposure by the farmers in receiving information on rice production technology, the study was conducted with the following objectives.

1. To determine and describe the selected characteristics of the farmers. The selected characters are:

❖ Personal characteristics:

i. Age
ii. Level of education
iii. Farming experience
iv. Agricultural knowledge

❖ Economic characteristics:

v. Farm size

❖ Social characteristics:

vi. Organizational participation

vii. Cosmopoliteness

viii. Innovativeness

2. To determine and describe the extent of use of communication media by the farmers in relation to rice production technologies:

The selected communication media were:

❖ Individual contact media:

i. Sub-Assistant Agricultural Officer (S.A.A.O)

ii. Agricultural Extension Officer (A.E.O.)

iii. Upazila Agricultural Officer (U.A.O.)

iv. Companies representative

v. Farm and Home visit

❖ Group contact media:

vi. Group discussion meeting

vii. Meeting at result demonstration

❖ Mass contact media:

viii. Radio

ix. Television

x. Newspaper

❖ Interpersonal contact media:

xi. Progressive farmers

xii. Friends

xiii. Neighbors and Relatives

xiv. Seed dealer

xv. Fertilizer dealer

The selected modern rice production technologies are:

i. Recommended modern varieties.

ii. Recommended dose of fertilizer

iii. Plant protection measures

iv. Recommended irrigation

3. To determine the relationships between the individual characteristics and communication exposure of the farmers in relation to rice production technologies.

Methodology

Data were collected from 100 randomly selected respondents of two selected villages of Damador union under Phultala Upazila under Khulna district. Data were collected by using an interview schedule from the farmers during 1st February to 28th February 2006. Co-efficient of correlation test was used to explore relationship between the concerned variables. The major findings of the study are summarizing below.

MAJOR FINDINGS

Characteristics of Farmers:

Age

Age of the study group ranged from 22-75 years with a mean value 39.1 years the highest proportion (45%) of the farmers were in the middle age category as compared to 34% young and 24% of old age.

Education

Education of farmers ranged from 0-14 years of schooling with a mean value 7.52. The highest proportion (40%) of farmers had secondary level education followed by 23% with primary level of education, 20% with higher secondary level education 5% of had no schooling and only 7% can sign only.

Farming experience

Farming experience ranged from 04-50 years with a mean value 17.84 years. The highest proportion 60% of farmers had medium farming experience followed by high farming experience (27%) and low farming experience (12%).

Farm size

The farm size ranged from 0.04 to 5.6 hectors. The highest proportion 51% of farmers had small farm holding category as compared to 28% with medium holding 12% with marginal and only 9% with large size farm.

Organizational participation

Organizational participation score of the farmers ranged from 0-8 with mean value 1.51. The highest proportion 40% of farmer had no participation as compared to 34% of farmer had low participation, 21% of farmers had medium participation and only 5% farmers had high participation.

Cosmoploiteness

Cosmoploiteness score of farmers ranged from 1-12 with mean value of 5.83. The highest proportion 52% of farmers had medium proportion cosmoploiteness compared with 28% having low cosmoploiteness and only 20% having high cosmoploiteness.

Innovativeness

The innovativeness scores of the farmers ranged from 7-20 with mean value 13.44. The highest proportion 50% of farmers had medium innovativeness, 29% of farmers had low innovativeness and only 21% of farmers had high innovativeness.

Agricultural knowledge

Agricultural knowledge scores of the farmers ranged from 23 to 47 with mean value 38.15. The highest proportion 59% of farmers had medium knowledge compared as 23% of farmers had low knowledge and only 18% of farmers had high knowledge.

Extent of use of communication media by the Farmers:

The highest extent of use of communication media by the farmers was found in contact with Sub-Assistant Agricultural Officer was closely followed by fertilizer leader, television, group discussion meeting, progressive farmers friends and seed dealer, companies representative was used to the lowest extent.

An educated farmer used to participate in different organization and visit to the places external to him. These help him to expose to different media. The knowledge level increases when an educated person expires to different media.

CONCLUSION

A conclusion presents the statements based on major findings of the study and these statements mostly confirm to the objectives of the research in the shortest form. It presents the direct answers of the research objectives, or it relates to the hypothesis (Labbon and Schefter, 1990, Booth, 1993).

Considering the objectives of the study and the above guidelines for writing a conclusion section of a research report, the specific conclusion of the present study may be drawn as follows:

1. Sub-Assistant Agricultural Officer, Fertilizer dealer, Neighbors and Relatives, Progressive farmers had used more by the farmers in receiving information on rice production technologies.

2. Group contact media group discussion was used by the farmers at a considerable extent but less proportion of the farmers used meeting at result demonstration.

3. Among the mass media television was used by the farmers at a considerable extent but less proportion, newspaper & radio.

4. Education of the rice farmers had positive and highly significant relation ship with their communication exposure. This implies that with the increase of level of education of the rice farmers their communication exposure on rice production technologies also increase that means the more education of the rice farmers the more exposure of the rice farmers towards communication media. Hence, it may be concluded that education plays an important role in enhancing the communication exposure of the farmers.

5. The statistical analysis showed that age of the farmers had significant and but negative relations with their communication exposure. This findings lead to the conclusion that the more age of the farmers the less of their communication exposure.

6. Cosmopolite people come in contact with new people and new ideas through traveling outside their own social system. Cosmopoliteness therefore, helps an individual to collect news and information. The findings in this study cosmopoliteness of the respondents had a positive and significant relationship with their communication exposure. It is implies that with the increase of cosmopoliteness their communication exposure also increased.

7. Farm size Organizational participation and innovativeness of the farmers had no significant exposure. This implies that communication exposure and above characters of the farmers is independent to each other.

RECOMMENDATIONS

1) It was evident that rice farmers revealed majority on their neighbors and relative, friends and progressive farmers of the locality. The extension workers would, therefore, develop opinion leadership role effective in the change program.
2) The results of the study clearly indicated that the higher level of education greater the extent of use of communication media, it is recommended that arrangement should be made for literacy among the farming community increase the extent of use of information sources.
3) The researcher investigated that local fertilizer dealers were the mostly the consulted source of information regarding fertilizer and other agricultural information. Based on this result fertilizer dealers should be given short and mid term training on various issues of agriculture.
4) Group discussion was found to be important medium in communicating agricultural information to the farmers. So group discussion should be strengthening in disseminating information as it effective to create more confidence among the rice farmers through discuss and share their problem each other.
5) Television and Newspaper are very important communication media for transferring agricultural technologies to the farmers. So, the concerned authorities should attempts to use and utilize the mass media like television and newspaper through display more and more production oriented programme so that many aspect of rice production technologies can learn and diffused it to the farmers.
6) The researcher observed that most of the innovative farmers sit in the tea stall and they discuss their daily activities and agricultural practices. Therefore the extension workers and other concerned authorities should use this place to diffuse their innovation to the farming community easily and properly.

Recommendations for Further Study

1. This study investigated the relationship of eight characteristics of the farmers only with their communication exposure. It is therefore, recommended that further study should be conducted involving other characteristics.
2. The present study was concerned with the communication exposure of the farmers in case of rice production technologies. Only four recommended practices viz. recommended variety, recommended dose of fertilizer, plant protection measures and recommended irrigation. Further studies should be conducted to the farmers with respect to other rice production technologies.
3. The present study was conducted in two villages of Damador union under Phultala Upazila of Khulna district. So, similar attempts may be undertaken in other parts of the country.

4) Salinity in water was the major problem in the study area. Iron also another problem of the study area. Input cost such fuel price, seed, fertilizer, insecticide are very high. So government should take proper step to solve water problem by taking long term planning and for this digging cannel of the study area.

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Appendix A

(ENGLISH VERSION OF THE INTERVIEW SCHEDULE)

Department of Agricultural Extension and Information System
Sher-e-Bangla Agricultural University
Dhaka-1207.

INTERVIEW SCHEDULE FOR THE STUDY OF "COMMUNICATION EXPOSURE OF THE FARMERS IN RELATION TO RICE PRODUCTION TECHNOLOGIES".

(Information collection through this interview schedule will be kept confidential and only be used for research purpose)

Serial No.:.....

Name of the respondent: .....

Village: .....Union.....

Thana :.....District.....

1. **Age:**

   What is your present age?.....years.

2. **Education:**

   What is your level of education?.....

   i) Don't know reading and writing

   ii) Can sign only

   iii) I have read up to class.....

3. **Farming experience:**

   How long experience do you have in farming?.....

4. Farm Size:

Place give the size of your land according to tenure status.

Sl. No	Types of land and ownership	Land area	
		Local Unit	Hectare
1.	Homestead		
2.	Own land under own cultivation		
3.	Own land given to others on bogra		
4.	Land taken from others on bogra		
5.	Own land given to others on lease		
6.	Land taken from others on lease		
7.	Others		
	Total		

5. Organizational participation:

Please indicate the nature of your present or past participation in the following organizations.

Sl. No.	Name of the organization	Not participated	Ordinary member	Member of the executive Committee	President/Secretary
1.	Union parishad				
2.	Youth Club				
3.	School Committee				
4.	Mosque committee				
5.	Market				
6.	Krishak Samaboy				
7.	NGO group				
8.	Others (Specify)				

6. Cosmopoliteness:

Last year how often you visited the places mentioned below?

Sl. No.	Places of Visit	Frequency of visit		
		Frequently	Occasionally	Not visited
1.	Visit to other villages	8 or more times/month	1-7 times/month	
2.	Visit to own Upazila	7 or more times/month	1-6 times/month	
3.	Visit to own district	6 or more times/month	1-5 times/month	
4.	Visit to other Upazila	5 or more times/year	1-4 times/year	
5.	Visit to other district	4 or more times/year	1-3 times/year	
6.	Visit to capital and other cities (Dhaka, Khulna, Chittagong, Rajshahi)	3or more times/year	1-2 times/year	

7. Innovativeness:

If you use following farm practices, please indicate how many years you use.

Sl. No.	Name of practices	Never used	Duration			
			Less than 1- yr.	Less than 2- yrs.	2-3 yrs.	4-yrs of above.
1.	Cultivation of BR-28 variety of rice					
2.	Cultivation of Manik variety of tomato					
3.	Kazi Piara (Guava) cultivation					
4.	Artificial Insemination of cattle					
5.	Use of integrated pest management (IPM)					

8. Agricultural Knowledge:

Please answer the following questions:

Sl. No	Questions	Answer	Number assigned	Number obtained
1.	Name two improved varieties of rice		2	
2.	What are the functions of Urea?		5	
3.	Name two diseases of rice		2	
4.	Mention the name of two weeds of rice		2	
5.	Mention two green manure Crops		2	
6.	Mention the doses of Urea, Phosphate, and Potash in one hectare of rice cultivation.		6	
7.	What is IPM?		3	
8.	Name two vegetable which is enriched in vitamin-A		2	
9.	Mention any three harmful insect of rice		3	
10.	Mention advantages of rice-fish integrated culture.		5	
11.	Mention any three improved rice production technologies		3	
12.	Mention two method of bird control in rice field		2	
13.	Why cow dung and composed used in crop cultivation.		5	
14.	Mention three characteristics of good seed		3	
15.	What are the bad effects of excessive use of insecticides?		5	
		Total	50	

9. Use of communication media by the farmers in receiving information on rice production technologies

A) Please mention the communication media you used in receiving information on recommended varieties of rice and frequency of use.

Sl. No.	Communication Media	Frequency of communication		
		Frequently	**Occasionally**	**Not at all**
	INDIVIDUAL CONTACT MEDIA			
1.	Sub Assistant Agricultural Officer	6 or more times/month	1-5 times/month	
2.	Agricultural Extension Officer. (AEO)	4 or more times/month	1-3 times/month	
3.	Upazila Agricultural Officer (U.A.O)	3 or more times/month	1-2 times/month	
4.	Companies Representative	8 or more times/month	1-7 times/month	
5.	Farm and Home Visit	10 or more times/year	1-9 times/ year	
	GROUP CONTACT MEDIA			
6.	Group Discussion Meeting	5 or more times/ year	1-4 times/ year	
7.	Meeting at Result Demonstration	5 or more times/ year	1-4 times/ year	
	MASS CONTACT MEDIA			
8.	Radio	10 or more times/month	1-9 times/month	
9.	Television	4 or more times/month	1-3 times/month	
10.	Newspaper	7 or more times/month	1-6 times/month	
	INTERPERSONAL CONTACT MEDIA			
11.	Progressive Farmer	9 or more times/month	1-8 times/month	
12.	Friends	10 or more times/month	1-9 times/month	
13.	Neighbors and Relatives	10 or more times/month	1-9 times/month	
14.	Seed Dealer	8 or more times/month	1-7 times/month	
15.	Fertilizer Dealer	8 or more times/month	1-7 times/month	

B) Please mention the communication media you used in receiving information on recommended doses of fertilizer and frequency of use.

Sl. No.	Communication Media	Frequency of communication		
		Frequently	Occasionally	Not at all
	INDIVIDUAL CONTACT MEDIA			
1.	Sub Assistant Agricultural Officer	6 or more times/month	1-5 times/month	
2.	Agricultural Extension Officer. (AEO)	4 or more times/month	1-3 times/month	
3.	Upazila Agricultural Officer (U.A.O)	3 or more times/month	1-2 times/month	
4.	Companies Representative	8 or more times/month	1-7 times/month	
5.	Farm and Home Visit	10 or more times/year	1-9 times/ year	
	GROUP CONTACT MEDIA			
6.	Group Discussion Meeting	5 or more times/ year	1-4 times/ year	
7.	Meeting at Result Demonstration	5 or more times/ year	1-4 times/ year	
	MASS CONTACT MEDIA			
8.	Radio	10 or more times/month	1-9 times/month	
9.	Television	4 or more times/month	1-3 times/month	
10.	Newspaper	7 or more times/month	1-6 times/month	
	INTERPERSONAL CONTACT MEDIA			
11.	Progressive Farmer	9 or more times/month	1-8 times/month	
12.	Friends	10 or more times/month	1-9 times/month	
13.	Neighbors and Relatives	10 or more times/month	1-9 times/month	
14.	Seed Dealer	8 or more times/month	1-7 times/month	
15.	Fertilizer Dealer	8 or more times/month	1-7 times/month	

C) Please mention the communication media you used in receiving information on plant protection measures in rice production and frequency of use.

Sl. No.	Communication Media	Frequency of communication		
		Frequently	**Occasionally**	**Not at all**
	INDIVIDUAL CONTACT MEDIA			
1.	Sub Assistant Agricultural Officer	6 or more times/month	1-5 times/month	
2.	Agricultural Extension Officer. (AEO)	4 or more times/month	1-3 times/month	
3.	Upazila Agricultural Officer (U.A.O)	3 or more times/month	1-2 times/month	
4.	Companies Representative	8 or more times/month	1-7 times/month	
5.	Farm and Home Visit	10 or more times/year	1-9 times/ year	
	GROUP CONTACT MEDIA			
6.	Group Discussion Meeting	5 or more times/ year	1-4 times/ year	
7.	Meeting at Result Demonstration	5 or more times/ year	1-4 times/ year	
	MASS CONTACT MEDIA			
8.	Radio	10 or more times/month	1-9 times/month	
9.	Television	4 or more times/month	1-3 times/month	
10.	Newspaper	7 or more times/month	1-6 times/month	
	INTERPERSONAL CONTACT MEDIA			
11.	Progressive Farmer	9 or more times/month	1-8 times/month	
12.	Friends	10 or more times/month	1-9 times/month	
13.	Neighbors and Relatives	10 or more times/month	1-9 times/month	
14.	Seed Dealer	8 or more times/month	1-7 times/month	
15.	Fertilizer Dealer	8 or more times/month	1-7 times/month	

D) Please mention the communication media you used in receiving information on recommended irrigation in rice production and frequency of use.

Sl. No.	Communication Media	Frequency of communication		
		Frequently	**Occasionally**	**Not at all**
	INDIVIDUAL CONTACT MEDIA			
1.	Sub Assistant Agricultural Officer	6 or more times/month	1-5 times/month	
2.	Agricultural Extension Officer. (AEO)	4 or more times/month	1-3 times/month	
3.	Upazila Agricultural Officer (U.A.O)	3 or more times/month	1-2 times/month	
4.	Companies Representative	8 or more times/month	1-7 times/month	
5.	Farm and Home Visit	10 or more times/year	1-9 times/ year	
	GROUP CONTACT MEDIA			
6.	Group Discussion Meeting	5 or more times/ year	1-4 times/ year	
7.	Meeting at Result Demonstration	5 or more times/ year	1-4 times/ year	
	MASS CONTACT MEDIA			
8.	Radio	10 or more times/month	1-9 times/month	
9.	Television	4 or more times/month	1-3 times/month	
10.	Newspaper	7 or more times/month	1-6 times/month	
	INTERPERSONAL CONTACT MEDIA			
11.	Progressive Farmer	9 or more times/month	1-8 times/month	
12.	Friends	10 or more times/month	1-9 times/month	
13.	Neighbors and Relatives	10 or more times/month	1-9 times/month	
14.	Seed Dealer	8 or more times/month	1-7 times/month	
15.	Fertilizer Dealer	8 or more times/month	1-7 times/month	

10. **Please mention the problems you face in rice production**

1)----------

2)----------

3)----------

4)----------

5)----------

6)----------

7)----------

8)----------

9)----------

10)----------

Thank you for your kind co-operation

Signature of Interviewer

Date: ----------

Appendix-B

	V1 Age	V2 Education	V3 Farming experience	V4 Farm size	V5 Organizational participation	V6 Cosmo-politeness	V7 Innovative-ness	V8 Agricultural knowledge	V9 Communication exposure
V1 Age	1								
V2 Education	* -.209	1							
V3 Farming experience	*** 0.648	*** -0.508	1						
V4 Farm size	NS 0.177	NS 0.184	* .202	1					
V5 Organizational participation	** 0.282	NS 0.110	** 0.289	*** 0.332	1				
V6 Cosmopolitenes s	** -0.322	*** 0.358	*** -0.452	NS 0.077	NS 0.095	1			
V7 Innovativeness	NS 0.120	NS -0.031	NS 0.149	NS 0.121	** 0.270	NS 0.065	1		
V8 Agricultural knowledge	NS -0.150	*** 0.467	** -0.297	NS -0.152	NS 0.166	*** 0.466	NS 0.093	1	
V9 Communication exposure	* -0.234	*** 0.342	*** -0.408	NS -0.021	NS 0.135	** 0.317	NS 0.057	** 0.296	1

* = Correlation is significant at the 0.05 level
** = Correlation is significant at the 0.01 level
*** = Correlation is significant at the 0.001 level
NS = Non significant