

**INFORMATION SOURCES USED BY THE RESOURCE-POOR
FARMERS IN PRODUCING HYV BORO RICE**

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**INFORMATION SOURCES USED BY THE RESOURCE-POOR
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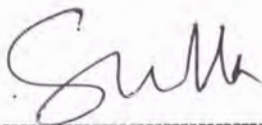
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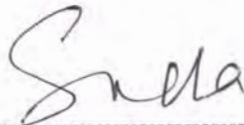
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CERTIFICATE

This is to certify that the thesis entitled, **"INFORMATION SOURCES USED BY THE RESOURCE-POOR FARMERS IN PRODUCING HYV BORO RICE"** 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 in AGRICULTURAL EXTENSION**, embodies the result of a piece of bona fide research work carried out by **MD. SHAHADAT HUSSAIN, Registration No. 26204/00496** under my supervision and guidance. No part of the thesis has been submitted for any other degree or diploma.

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

Dated:

Dhaka, Bangladesh

(Prof. Md. Shadat Ulla)
Supervisor



*Dedicated to
My
Beloved Parents who laid the
foundation of my success*

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ABBREVIATIONS AND ACRONYMS

HYV	:	High Yielding Variety
UNICEF	:	United Nations Children's Emergency Fund
GDP	:	Gross Domestic Product
BBS	:	Bangladesh Bureau of Statistics
FAO	:	Food and Agricultural Organization
DAE	:	Department of Agriculture Extension
UAO	:	Upazila Agriculture Officer
AEO	:	Agriculture Extension Officer
AIS	:	Agriculture Information Service
NGO	:	Non Government Organization
PFI	:	Problem Facing Index
SPSS	:	Statistical Package for Social Science
%	:	Percent
ha.	:	Hectare
ton ha ⁻¹	:	Ton per hectare
TV	:	Television
“000” TK.	:	Thousand Taka
VIZ	:	Videlicet or Namely

ABSTRACT

The main purpose of the study was to ascertain the extent of use of information sources by the resource-poor farmers in receiving information on HYV Boro rice production and to identify the pattern of use of information sources according to farm categories. Attempt was also made to explore the relationship between the use of information sources by the resource-poor farmers and their selected characteristics. The characteristics were age, education, farming experience, farm size, annual income, organizational participation, cosmopolitaness and agricultural knowledge.

The study was carried out at two villages of Charekkaria union under Mehendiganj upazila of Barisal district. Data were collected personally through interview schedule from one hundred randomly selected resource-poor farmers from a total of 465, those who were related to HYV Boro rice production. Data collection took 30 days from September 15 to October 14, 2006. Pearson's product moment correlation co-efficient (r) was used to explore the relationship between the selected characteristics of resource-poor farmers and their use of information sources.

The findings indicate that 82 percent of the respondents had medium use while 13 percent had high use and only 5 percent had low use of information sources in receiving information on HYV Boro rice production. Neighbors, experienced farmer, relatives, group discussion, radio, input dealer, SAAO came out as the first seven effective sources to having information in producing HYV Boro rice. Usually the resource-poor farmers preferred localities sources of information. As per classification of different information sources on their extent of use, the individual sources ranked first and were followed by group and mass sources.

Pattern of use of information sources of the respondents was identified based on their farm categories. It revealed that neighbors was first information source for marginal farmers and experienced farmer was first information source for small farmers.

As regards relationship, age of farmers had insignificant relationship with their use of information sources. Education, farming experience, farm size, annual income, organizational participation, cosmopolitaness and agricultural knowledge had positive significant relationship with their use of information sources.

The most serious three problems confronted by the farmers were- unavailability of agricultural training, inadequate farm and home visit by extension personnel and inadequate number of demonstration plot. On the other hand, the highest proportion of the farmers opined that the short training course can solve their problems to a great extent.



CHAPTER I

INTRODUCTION

CHAPTER I

INTRODUCTION

1.1 General background of the study

Bangladesh, one of the least developing countries of the world with 141 million population (UNICEF, 2006) is predominantly agricultural and 76.61 percent of the population live in rural areas (BBS, 2004). Agriculture contributes 23.08 percent to the gross domestic product and about two-thirds (62 percent) of labor force are engaged in agriculture (BBS, 2005).

The three basic necessities of mankind as recognized by most of us are food, shelter and clothing. But perhaps we would all agree that food is by and far the most important item than the other two. Agriculture is only known source of food. So, crop production of Bangladesh needs to be maximized in order to meet the increasing demand for food and other basic requirements.

In the 60s and 70s, Bangladesh achieved green revolution and its benefit was seen till 80s. In the middle of 90s we came to near self-sufficiency. But now again we are facing shortage in rice production as land and man ratio has decreased due to increased population especially in the farming community leading to break down of combined families into small, infrastructure development and natural disaster like river erosion.

This observation is supported by BBS (2005) and indicated that only 1.67 % of our farmers are rich farmers (farm size ranged from 3 ha and above), 11.65 % medium farmers (farm size ranged from 1.01 ha to 2.99 ha) and 52.83 % small and marginal farmers having a farm size of 0.02 to 1 ha. This means that majority of the farmers are small and marginal farmers and obviously they play an important role in food production. The production technology they use should have an impact on their farm out put.

Bangladesh being an agricultural country with its flat topography, abundant water and humid tropical climate is suitable for rice plant. Rice, as such, evolved as the staple food for its people and historically has been associated with their culture, rites and rituals. About 76.27 % of the total cultivable land is used for rice and its total production 26.19 million metric tons (BBS, 2005). Replacing the low yielding varieties and age old production practices by High Yielding Varieties (HYV) of rice and improved production technologies to bring about radical increases in rice production became necessary.

With appropriate management and favorable soil and environmental conditions, the HYV rice may yield 3.3 ton ha⁻¹ in Boro, 2.07 ton ha⁻¹ in Aus and 2.5 ton ha⁻¹ in transplanted Aman seasons compared with no more than 1.9 ton ha⁻¹ of the traditional varieties (BBS, 2005). Currently the average yield of rice in Bangladesh is around 2.4 ton ha⁻¹ which is frustratingly much below the average rice yield of some countries viz. South Korea- 6.87 ton ha⁻¹, Japan-6.41 ton ha⁻¹ and China - 6.32 ton ha⁻¹ (FAO, 2000). Therefore, it is observed that there is a wide range of production gap between Bangladesh and other countries. Now, the question how this gap could be minimized. The answer is to diffuse the technologies as advanced by the research.

To meet up the target, HYV rice technologies must be transferred to the end users, because the generation of technologies is not the ultimate goal. The technologies will be unused until the ideas are communicated rightly to the farmers who are the actual user of the technology. If the HYV rice farmers get the latest information of different technologies properly, their production will be increased.

To extend the technologies effectively, it is essential to know the information sources used by the farmers particularly the resource-poor farmers in receiving information regarding improved practices of HYV rice cultivation. The farmers usually received information from various sources to accomplish their farming activities. Very recently Miah and Halim (1992) found that "The small farmers

preferred interpersonal sources to obtain their necessary information''. The small and marginal farmers have limited access to professional information sources and improved farming practices. Because, the culture of Bangladesh is a traditional one. Traditional norms, values and beliefs are predominant and these are difficult to change. The peasant farmers are mainly illiterate and therefore, the impact of mass media on their life is very much limited. Interpersonal communication predominates in the rural society. As a result, changes that occur in the rural community are very slow, and are in fact very difficult to achieve.

Since small and marginal farmers are the majority of the farming community of the country, so the development of the small and marginal farmers means the development of the whole farming community. The information sources suitable in receiving agricultural information to the small and marginal farmers are not studied with greater emphasis as it should be. But a sound system of communication for the effective flow of scientific information from its sources to the ultimate users specially the resource-poor farmers has become a burning question of the day. Considering the above facts, the researcher felt a thrust to conduct a study with the hope to identify the information sources used by the resource-poor farmers in receiving agricultural information related to HYV Boro rice production.

1.2 Statement of the problem

Agricultural information has been considered as an important input for increased farm productivity. Over the years, agricultural technology has undergone many changes. The farmers have developed their own innovations and learned from each other's experiences and are applying modern technologies and methods advocated by experts and scientists. Various research studies reported that the use of information sources is varied on the basis of social, economic and psychological setting of the farmers. For identifying the information sources used by the resource-poor farmers in receiving farm information, it is necessary to

know the answers of the following questions. Moreover, the questions also guide the study towards an appropriate direction.

- i. What were the characteristics of HYV Boro rice producing resource-poor farmers?
- ii. To what extent the information sources were being used by the resource-poor farmers in producing HYV Boro rice?
- iii. To what pattern the information sources were being used by the resource-poor farmers in producing HYV Boro rice ?
- iv. Did the selected characteristics of the resource-poor farmers affect their use of information sources?
- v. What are the problems faced by the resource-poor farmers in receiving farm information from various sources with probable solutions as suggested by the respondents?

In view of the foregoing discussion, the investigator undertook a piece of study entitled, "Information Sources Used by the Resource-Poor Farmers in Producing HYV Boro Rice".

1.3 Specific objectives

In view of the aforesaid discussion, the following objectives were framed to give proper direction to the study:

1. To determine and describe the characteristics of the resource-poor farmers. The characteristics are :
 - i. Age
 - ii. Education
 - iii. Farming experience
 - iv. Farm size
 - v. Annual income
 - vi. Organization participation
 - vii. Cosmopolitaness
 - viii. Agricultural knowledge

2. To determine and describe the extent of use of information sources by the resource-poor in producing HYV Boro rice
3. To identify the pattern of use of information sources according to farm categories
4. To assess the relationship between the selected characteristics of the resource-poor farmers and their extent of use of information sources in producing HYV Boro rice
5. To determine the problems faced by the resource-poor farmers in having different information sources in producing HYV Boro rice with probable suggestions as suggested by the farmers

1.4 Importance of the study

- I. The findings of the study will help to identify appropriate information sources used by the resource-poor farmers in producing HYV Boro rice.
- II. It will help to develop appropriate information sources according to the need of the resource-poor farmers in producing HYV Boro rice.
- III. It will be helpful to determine farmer characteristics that are responsible to use information sources properly.
- IV. The findings of the study will reveal the phenomenon related to diffusion of innovation.
- V. It will be helpful to increase rice production in our country.
- VI. The study was also designed to bring in needed reforms in technology generation, assessment and dissemination, through upgrading the skills of extension workers and at the same time introducing reforms in the management of different sources.
- VII. The study will be a guideline and reference for other researchers in future.

1.5 Limitations of the study

Considering the time, money and availability of necessary resources the following limitations were taken throughout the study:

- i. The study was kept confined to two villages of Mehendiganj upazila under Barisal district.
- ii. The characteristics of the resource-poor farmers were many and varied, but only eight characteristics were selected for investigation in this study.
- iii. The population of the study was confined within the heads of the farm families, because they were the major decision makers in their families.
- iv. There are many technologies involved in HYV rice cultivation. But only five selected technologies were undertaken.
- v. There are many information sources from where farmers can receive information for their farming business. But only seventeen sources were selected for the study.
- vi. The study was conducted only in Boro season.

The findings of the study were particularly applicable to Lashkarpur and Kachia villages of Charekkaria union under Barisal district. Therefore, the findings of the study would be useful to apply in other areas of Bangladesh. The findings are expected to be useful to the extension workers and grass root level workers of development agencies.

1.6 Assumptions

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

- I. The respondents included in the sample were the actual representatives of the resource-poor farmers in the study area in respect of the use of information sources and the selected characteristics.

- II. The respondents were capable of providing proper answer to the questions included in the interview schedule.
- III. Views and opinions furnished by HYV Boro rice farmers included in the sample were the representative views and opinions of the population.
- IV. The responses furnished by respondents were reliable and true.
- V. The information sources included in the study were known to the respondents.

1.7 Statement of the hypothesis

The following hypotheses were formulated to test the relationship between the selected characteristics of the resource-poor farmers and their information sources used in receiving agricultural information.

Research hypothesis

There is a relationship between age, education, farming experience, farm size, annual income, organizational participation, cosmopolitaness and agricultural knowledge of the resource-poor farmers and their use of information sources.

For testing the hypotheses statistically, the following null hypotheses were formulated:

- i. There is no relationship between age of the resource-poor farmers and their use of information sources.
- ii. There is no relationship between education of the resource-poor farmers and their use of information sources.
- iii. There is no relationship between farming experience of the resource-poor farmers and their use of information sources.
- iv. There is no relationship between farm size of the resource-poor farmers and their use of information sources.
- v. There is no relationship between annual income of the resource-poor farmers and their use of information sources

- vi. There is no relationship between organizational participation of the resource-poor farmers and their use of information sources.
- vii. There is no relationship between cosmopolitanness of the resource-poor farmers and their use of information sources.
- viii. There is no relationship between agricultural knowledge of the resource-poor farmers and their use of information sources.

1.8 Definition of related terms

For clarity of understanding, certain terms used throughout the study are defined as follows:

► **Resource-poor farmers:** A farmer having minimum resources in terms of land, capital, and production inputs etc. in running his or her agribusiness. For this study, the farmers owned land ranging from 0.02 to 1.00 ha is termed as resource-poor farmers.

► **Age:** Age of a respondent is defined as the period of time in years from his birth to the time of interview.

► **Education:** Education refers to the development of desirable changes in knowledge, skill, action and attitude in an individual through reading, writing, observation and other related activities. In this study the educational level was measured on the basis of grades passed by an individual in formal educational institutions.

► **Farming experience:** Farming experience of a farmer is defined on the basis his involvement in activities related to agriculture. In this study, it was measured in terms of years.

► **Farm size:** It refers to the hectare of land owned by a farmer on which he carried out his farming business, the area being estimated in terms of full benefit to the farmer. A farmer was considered to have full benefit from cultivated

area either owned by himself or obtained on lease from others and half benefit from area which is either cultivated by himself or given to others on the basis of share cropping. In the study, farmers possessing land up to 1 ha (small and marginal) were taken into consideration.

▶ **Annual income:** Annual income is defined as total earning of an individual and the members of his family from agricultural means and other sources during one year previous to data collection. It is expressed in Taka.

▶ **Organizational participation:** Organizational participation of an individual refers to his direct contact with various organizations within a specific period of time. An individual could take part in various activities of organizations ordinary member, executive committee member or officer (President, Secretary, Treasurer etc.). All these form of participation were considered to operationalize the variable.

▶ **Cosmopolitaness:** It refers to the degree to which an individual is oriented external to his own social system.

▶ **Agricultural knowledge:** It refers to the knowledge gained by the farmers from different formal, non formal as well as informal sources and also through their experience of farming. It includes the basic understanding of the use of different agricultural inputs and practices.

▶ **HYV rice:** High Yielding Varieties (HYV) rice refers to a variety of rice which possesses genetic ability to provide better yield potentiality than the indigenous rice variety. These varieties are released from research institution.

▶ **Information source:** Information source refers to the channel through which various information are diffused to the farmers about different aspects of

cultivation. The sources of information may be classified into a number of ways according to different criteria.

According to form

Spoken: Farm and home visit, farmer's call

Written: Farm publications, news paper

According to nature

Personal localities: Local leader, local people

Personal cosmopolite: Extension agent

According to nature of contact with people

Individual: Farm and home visit, experienced farmer

Group: Group meeting, training

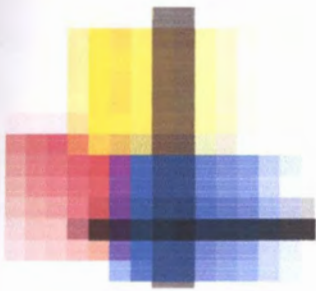
Mass: Radio, television, exhibition

► **Extent of use of sources:** The extent of use of source refers to the degree to which sources under study were used by the respondents. Generally number of contacts made by the respondents is used for measuring it.

► **Pattern of use of sources:** It refers to the sequence of use of information sources followed in a homogeneous group of farmers.

► **Hypothesis:** Defined by Goode and Hatt (1952), a proposition which can be put to a test to determine its validity. It may be true or false, it may see contrary to or in accord with common sense. However, it leads to an empirical test.

► **Null hypothesis:** The hypothesis which we pick for statistical test is null hypothesis (Ho): In this study null hypothesis stated that there is no relationship between the concerned variables.



CHAPTER II

REVIEW OF LITERATURE

CHAPTER II

REVIEW OF LITERATURE

Communication has been a key factor to the development of mankind from time on immemorial. With the introduction of scientific techniques in farming, the communication of agricultural information has become imperative to improve farming activities. But not much studies of this nature have been conducted in Bangladesh and elsewhere. However, the researcher has left no stone unturned to collect needed information by through searching of related books, journals and periodicals. The collected information from the review of literature has been placed below to strengthen the knowledge of the researcher for better and clear understanding about the present study. Nevertheless, the collected information through review of literature may not be identical but similar to the present study. The reviewed literature has been placed in two sections. The first section deals with the findings on the use of information sources by the farmers in producing HYV rice and the second section is devoted to discussion on the findings of studies exploring relationship between HYV rice farmers and their use of information sources.

2.1 Review of studies on use of information sources in receiving agricultural information by the farmers

Sawhney (1967) measured the use of different sources in terms of percentages of farmers using them. The extent of use of these sources was measured as follows : Farm and home visits 20.9%; method demonstration 18.4% ; result demonstration meeting 11.6% ; neighbors and friends 7.4% ; office calls 4.2 % ; result demonstration 3.8% ; agricultural exhibitions 2.7% ; filling poster and flannel graphs 2.3% ; radio 1.2 % ; publications 2.0 % ; field days 1.3% ; and newspaper 1.2%.

Karim (1969) conducted a study at union level in Mymensingh district and found that about 97 percent of the rice growers mentioned friends and neighbors as the information sources, while 26% mentioned result demonstration, field tour, Method demonstration and short course training. About one fourth (23%) of the farmers cited visit and office call as sources of farm information. Radio, motion picture, poster, agricultural magazine, newspaper and pamphlets as information sources for rice stood only.

Singh and Sahay (1970) reported in a study in India that village level workers were the main sources in receiving agricultural information. Some other principal sources were village leaders, neighbors, demonstration and printed materials.

Latif (1974) conducted a study that farmers received maximum agricultural information from their relatives and then from progressive farmers and agricultural radio programmes. Agricultural fair, office call and newspaper were used to a moderate extent. Farm and home visit, agricultural poster, pamphlet and leaflet, result demonstration, "Krishi Katha" and agricultural meeting were used to a low degree.

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 and development centre (35%), farm and home visit (43%), publication (35%), radio farm programmes (21%), newspaper (43%), result demonstration (8%) and Krishi Katha (5%).

Ahmed (1977) in his study on the use of information sources in jute cultivation found that the role of group contact (38.72 percent) sources was much greater than those of mass contact (21.23 percent), informal contact (20.44 per cent) and individual contact (19.61 per cent). However, when the single information sources was considered irrespective of categories, it was found that the highest proportion of citations was for the neighbors, friends and relatives (94 percent).

Narayan (1978) showed from his study in some parts of Karnatak State in India that most important sources for peas growing were neighbors and relatives where as neighbors, relatives, radio, higher level extension staff and village level workers were the sources of information in the knowledge stage of fertilizer use.

Ania (1986) found in a study that extension officers were the most important information source persons; radio and television are considered as the most frequently used communication media by farmers.

Das, P.K. and J.K. Sharma (1998) noticed that radio and TV in the third world mainly broadcast entertainment programmes, therefore, their credibility as sources of agricultural information is very low and that for newspaper is almost nil.

Dinampo (1989) conducted a study in Philippines to determine communication need and preferences. He observed that farmers were found to prefer an interpersonal media (extension agents) rather than mass media.

De-la-Vega (1990) conducted a study in Philippines and found that in terms of availability of mass communication media channels, radio and TV were the most available. A great majority of the respondents listen radio every day and consider it as their main source of news. The communication channels they preferred as credible were radio, interpersonal sources and TV.

Kshem and Halim (1990) in their study concluded that communication sources such as friends, neighbors, seed, fertilizers and pesticide dealers were the most reliable and trustworthy for agricultural information to the farmers.

Chugh (1991) in a study observed that press , radio and television were regarded as important vehicles of information which ensured the supply of inputs to those who really need.

Wate and Rivera (1991) in their study examined the application of new technologies in agricultural information transfer process and explored future perspectives of new technologies as a force of change in developing countries. They found that print media, electronic media, radio, television, satellite computers and mobile audio-visual media were the important sources of spreading information.

Hadiwisastra (1992) in a study in Indonesia found that group communication productivity tended to be affected by radio and television ownership, radio programme preference, respondents listening to rural radio programmes, personal communication network pattern, the availability of village information centre, etc.

Hossain (1992) reported that farmers in both relatively more and less progressive villages of Bangladesh preferred consulting with friends, relatives and neighbors more often than with the official sources for agricultural information.

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 media for receiving information.

Ahmed (1995) conducted a study on farmers' agricultural information needs and found that much of farmers' generated information (74.91%) was situation. Demand for information was 14.21% of the total.

Khan and Paracha (1994) conducted a study in two village in Pakistan, one innovative and other non-innovative 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 newspapers.

DAE (1995) in order to achieve the objectives of the extension programmes considered the following extension methods and strategies:

- Media campaign including printed media, radio and television
- Upazila and District fair
- Traditional and folk media
- Group meeting
- Farmers' training, motivational tour, farm walk, method demonstration, field days, result demonstrations, individual farm visit etc.

An individual decision about a innovation is not an instantaneous act. Rather, it is a process that occurs overtime and consists of a series of actions (Rogers, 1995). Various sources are used at different stages such as in knowledge stage radio, TV, exhibition, printing materials, group discussion, extension agent; at persuasion stage commercial sources; at decision stage result demonstration, farm and home visit; at implementation stage training and at confirmation stage visit other adopter field, peer farmers are effective. The model presented of the innovation-decision process is depicted in Fig. 1 presented below:

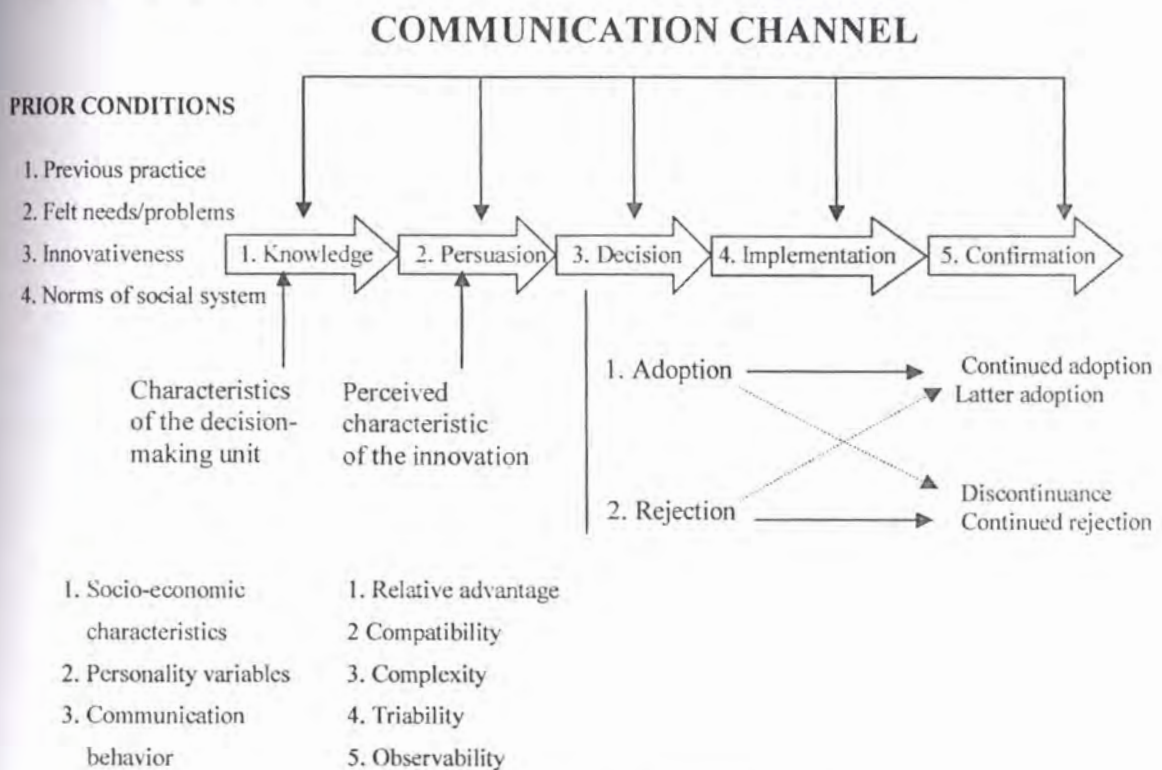


Figure 2.1 A model of stages in the innovation-decision process

Sarker (1995) in his study found that 99 per cent of the small farmer had low to medium use of communication media in receiving agricultural information for performing various farming operations. He also indicated that the small farmers mostly preferred localite and non-professional sources for getting agricultural information.

Khan (1996) conducted a study on the use of communication sources by the poor farmers and concluded that 75 percent of the respondents had medium use of various information sources for receiving agricultural information.

Rahman (1996) conducted a study at Sherpur Thana of Bogra District and found that the farmers of vegetable growers received maximum information from neighbors, friends and relatives which was followed by radio farm programme 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.

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 (6.77%) extent.

Khalil (1998) showed from his study in some villages of Gazipur district that the highest extent of use of information source was neighbors which was followed by result demonstration, Block Supervisors, Bangladesh Betar and tea stall. It revealed that neighbors were first information source for marginal and small farmers and Block Supervisors were first information source for medium formers.

Rathod *et al.* (1998) conducted a study in 1997 in Ramtek Panchayat Samiti, Nagpur, Maharashtra, India, to explore the relationship between level of

information seeking behavior (low, medium and high) and psychological (localite-cosmopolitaness) and communication (extension contact) characteristics of a sample of 150 tribal farmers. A significant relationship was found between extension contact and information seeking behavior and between localite-cosmopolitaness and information seeking behavior.

Anissuzzaman (2003) conducted a study at Sadar upazilla of Mymensingh district and found that about two third of the farmers were medium to high users of communication media where only 40.9 percent of them were low users of communication media in adopting three farm practices of rice cultivation. The citations for neighbors, friends and relatives were 13.64, 15.60 & 16.01 percent for recommended variety of rice, recommended dose of fertilizer and plant protection measures, respectively.

Alam (2004) found that on the basis of media use index, among 18 communication media, the first five communication media were neighbors (1159), progressive farmers (1140), friends (921), Block Supervisor (779) and relatives (743) in receiving information on winter vegetable cultivation.

Karim (2005) in his study on farmer's use of communication sources in receiving agricultural information found that 62.1 % of the farmers had medium use while 25.2 % had low use , and 12.7 % of the farmers had high use of communication sources. Discussion with Agriculture Extension Officer, SAAO, experienced farmer, relatives, input dealers were the major sources as cited by the farmers in receiving agricultural information.

From the literature discussed in this section it appears that producing rice and some other crops was positively and significantly related with the use of different information sources. The present study was intended to provide more information on farmers and their use of different information sources in producing HYV rice.

2.2 Review of studies on the selected characteristics of farmers and use of information sources

2.2.1 Age and use of information sources

Roy (1981) reported that the age of the small income farmers had no significant effect in using communication media on use of balance does of fertilizer.

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

Sarker (1995) observed a negatively insignificant relationship between age of the small farmers and their use of communication media in receiving agricultural information.

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

Rahman (1996) undertook an investigation on communication behavior of winter vegetable growers at Sherpur thana of Gazipur District. He reported that age had no relationship with communication behavior.

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

Khalil (1998) observed a negatively insignificant relationship between age of the farmers and their use of information sources in producing HYV Rice.

Karim (2005) in his study concluded that age of the farmers had a negative significant effect on the use of communication sources in receiving agricultural information.

Most of the research findings on age and use of information sources showed that either the variables are of independent or they have negative relationships. This means that age of the farmers do not possess any significant influence upon their use of information sources in receiving agricultural information as well as the farming practices.

2.2.2 Education and use of information sources

Bhuiyan (1988) showed that education had positive and significant contribution on the comprehensive 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.

Sarker (1995) found a highly positive significant relationship between education of the small farmers and their use of communication media.

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

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 vegetable growers, the more were their use of information sources for vegetable cultivation.

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

The above research findings suggested that in most of the cases level of literacy of the farmers encourages them to maintain better contact with various information sources resulting receiving of adequate agricultural information.

2.2.3 Farming experience and use of information sources

Khalil (1998) mentioned in his study that farming experience of the farmers had low association with their use of different information sources.

2.2.4 Farm size and use of information sources

Ahmed's (1977) study showed that farm size had significant influence on the use of information sources in the adoption of plant protection measures.

Bhuiyan (1988) found that the farm size had significant positive correlation with the use of information media in the adoption of selected improved farm practices in rice cultivation.

Hooda (1989) found that land holding of the farmers had positive and significant correlation with their communication behavior.

Sarker's (1995) study showed that farm size of the small farmers had a significant amount of influence upon their decision on using communication sources of information.

Rahman (1996) concluded in his study that farm size had moderate association with their use of information sources.

Anisuzzaman's (2003) study in Boyra union of Mymensingh district revealed that no significant relationship between farm size and use of communication media in the adoption of each of the three recommended practices, namely, recommended variety of rice, recommended doze of fertilizer and plant protection measures.

Majority of the researchers opined that the farm size has relationship with the use of various information sources and the adoption of improved farming practices.

2.2.5 Annual income and use of information sources

Sawhney (1996) showed that income was positively related to use of different information sources and media.

Bhuiyan (1988) found that regression co-efficient of income towards use of communication media were statistically not significant and concluded that income was not related to the comprehensive use of the communication media by the farmers.

Hossain and Crouch (1992) observed that farmers annual income had positive relationship with their use of mass media.

Uddin (1993) founded that there was a relationship between annual income of the sugarcane growers and their reception of information in sugarcane cultivation.

Rahman (1996) found in his study that annual income of the winter vegetable growers had moderate association with their use of different information sources.

Karim (2005) found that income of the farmers had significant effect on the use of communication sources in receiving agricultural information.

Majority of the research findings indicated that the annual income of the farmers had significant amount of influence on their use of communication media to receive farm information for getting higher farm output.

2.2.6 Organizational participation and use of information sources

Sarker (1995) in his study revealed that the use of communication media by the small farmers had significant positive correlation with their organizational participation.

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

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

Khan (1996) in his study indicated that organizational participation of poor farmers had significant positive effect on their use of information sources.

Karim (2005) concluded that there was a positive significant relationship between organization participation of the farmers and their use of communication sources in receiving agricultural information.

On the basis of research findings mentioned above it may be concluded that the organizational participation enables the farmers in maintaining better exposure with various information sources and different personalities resulting adoption of improved farming practices.

2.2.7 Cosmopoliteness and use of information sources

Hossain and Crouch (1992) reported that cosmopoliteness had positive relationship with the information sources.

Uddin (1993) showed that there was no relationship between the consmopoliteness 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 the winter vegetable growers had moderate association with their use of different information sources

Anisuzzaman (2003) observed in his study that cosmopolitanism of rice growers had significant positive effect on their use of communication media.

Considering the above mentioned research finding it may be concluded that the cosmopolitanism of the farmer and their use of various information sources are dependent of each other.

2.2.8 Agricultural knowledge and use of information sources

Paul (1989) found in his study that the knowledge gained by the farmers from different sources and also through their experience regarding different aspects of agriculture were related with attending of result demonstration meeting.

Kashem and Halim (1991) found in their study that agricultural knowledge had significant positive correlation with competence, belief and attitudes towards agricultural technologies, behavior intent, innovativeness, self-confidence cosmopolitanism, use of communication media in the transfer of modern rice technologies, use of communication media in livestock production, use of communication media in fish culture and use communication media in adoption of total agricultural technologies.

Sarker (1995) in his study on communication media used by the small farmers in receiving agricultural information found that the agricultural knowledge of the farmers are highly correlated with their communication media use.

Karim (2005) in his study on farmer's use of communication sources in receiving agricultural information found a significant positive relationship between knowledge of the farmers and their communication sources used.

This means that agricultural knowledge of the farmers played an important role in receiving information on farming practices. Therefore, it may be concluded that

agricultural knowledge of the farmers influence them to maintain contact with various information sources for receiving information on improved farm practices.

2.3 Conceptual framework

Conceptual framework is the foundation for understanding the research issue and linkage among the different variables. It helps as a guiding principle for analyzing the research issues. In this chapter, presents a brief description on concept of information sources and established its cause-effect relationship with the selected characteristics of respondent.

It is evident from the past studies that every occurrence of phenomenon is the outcome of a number of variables which may or may not be interdependent or interrelated with each other. In other words, no single variable can contribute wholly to a phenomenon. Variables together are the causes and the phenomenon is effect and thus, there are cause-effect relationships everywhere in the universe.

The conceptual framework was kept in mind forming the structural arrangement for the dependent and independent variables. This study was concerned with the use of Information sources in producing HYV rice as a dependent variable and the selected characteristics of the farmer as independent variables. Opinion of an individual may be influenced and affected through interacting forces of many characteristics in his or her surrounding. It is impossible to deal with all characteristics in a single study. It was therefore, necessary to limit the characteristics, which include age, education, farming experience, farm size, annual income, organizational participation, cosmopolitaness and agricultural knowledge. Based on these discussion and review of literature, the conceptual framework of this study has been formulated and shown in Figure 2.2

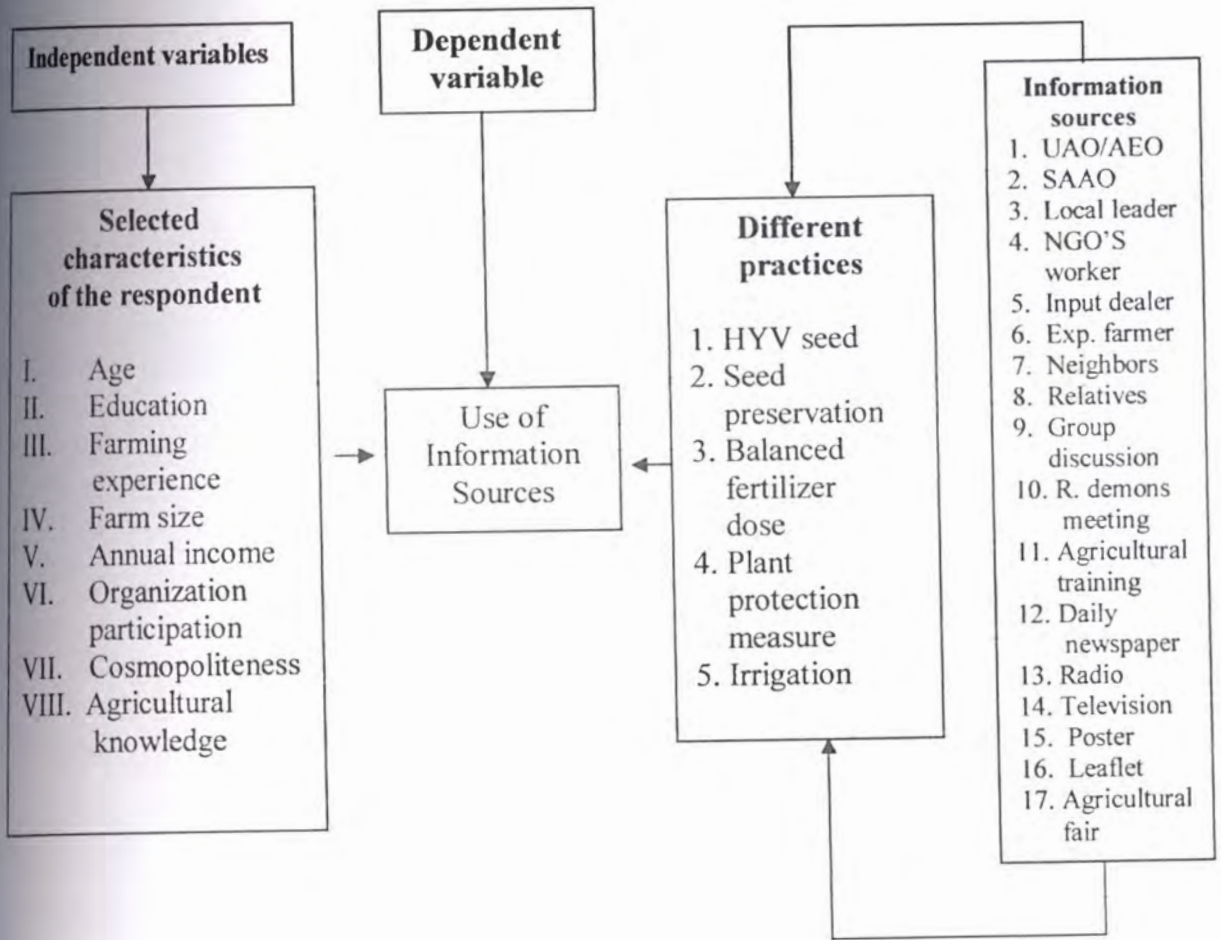
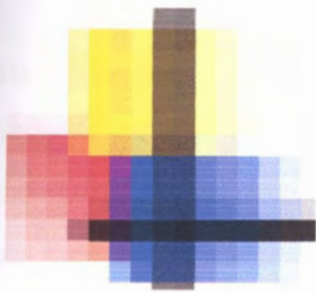


Figure 2.2 A simple conceptual framework of the study



CHAPTER III

METHODOLOGY

CHAPTER III

METHODOLOGY

Importance of methods and procedures in conducting any research can hardly be over emphasized. Methodology should be such as it would be enable the researcher to collect valid information and to analyze that properly to arrive at correct decisions. Keeping this in mind the researcher took utmost care for using proper methods in all aspects of this investigation.

3.1 Locale of the study

Mehendiganj, a riverine upazila under Barisal district, was selected purposively as the locale of the study. The area was selected because it was an intensive rice production area. The location of the study area is depicted in Fig. 3.1, 3.2 and 3.3.

3.2 Population and Sampling design

Out of 13 unions, one union, Charekkaria was selected at randomly. Two villages viz. Lashkarpur and Kachia were selected following random sampling technique from a total of 26 villages. All the resource-poor farmers (those who owned 0.02 to 1.00 ha of land) of the two villages, Lashkarpur and Kachia, who cultivated HYV Boro rice constituted the population of the study. An up-to-date list of the resource-poor farmers was prepared with the help of Sub-Assistant Agriculture Officer and ward members. The total number of resource-poor farm families in two villages was 465. So, heads of the 465 farm families constituted the population of the study.



Figure 3.1 A map of Bangladesh showing Barisal district

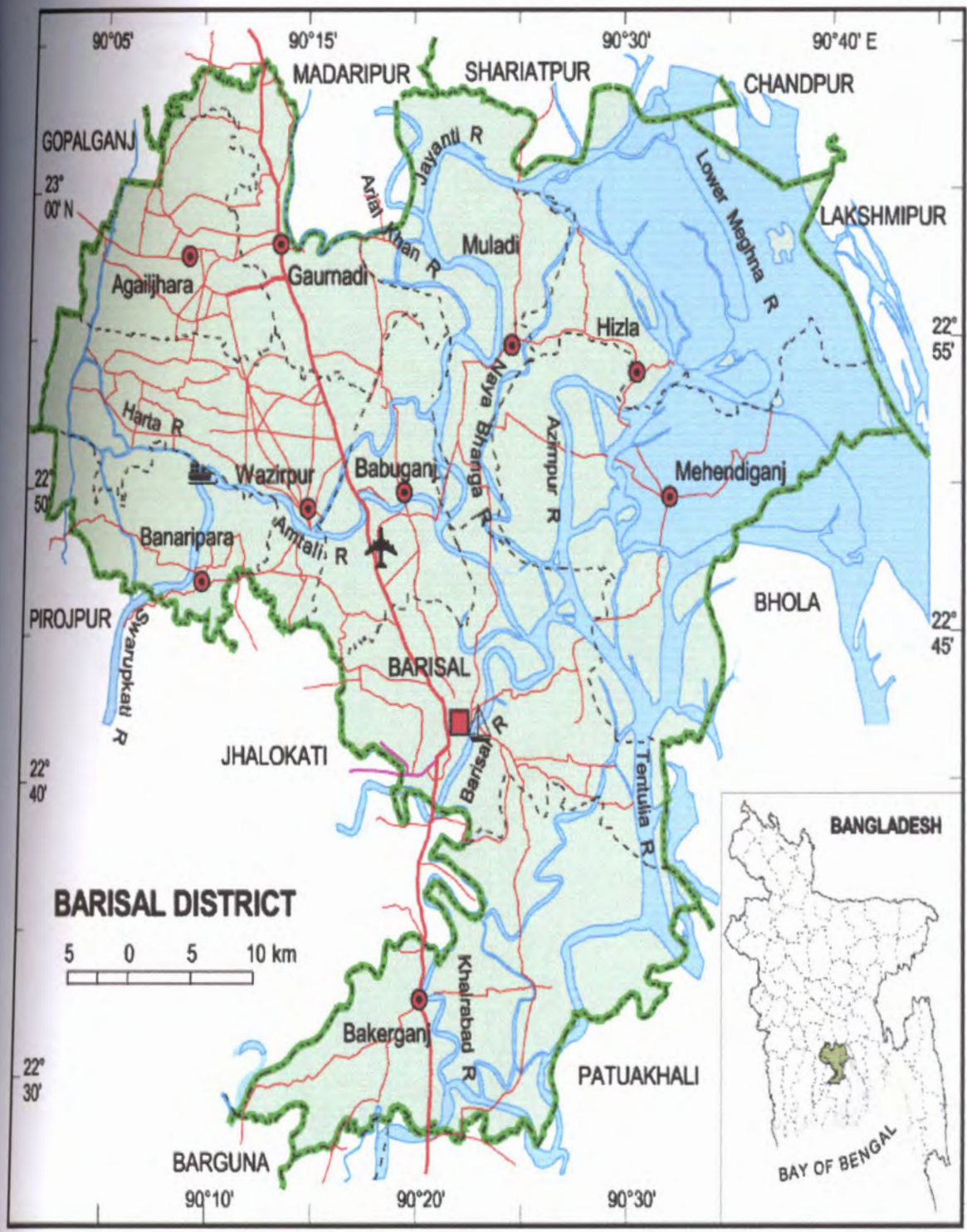


Figure 3.2 A map of Barisal district showing Mehendiganj upazila



Figure 3.3 A map of Mehendiganj upazila showing the study area

For proportionate representation from each village, sample was drawn from the total population following random sampling method. Twenty one point five percent of the resource-poor farmers were selected from each village which constituted the sample of 100 for the present study. A reserve list of 10 farmers was also prepared for use in the event of non availability of respondents included in the original sample during the collection of data. Distribution of farmers in accordance with the total population of the villages and the number included in the sample is presented in Table 3.1

Table 3.1 Sampling procedures followed in selecting HYV rice producing resource-poor farmers

Name of the village	Total number of resource-poor farm families engaged in HYV rice production	Sample size (In number)	Number of farmers in reserve list
Lashkarpur	290	62	6
Kachia	175	38	4
Total	465	100	10

3.3 Variables and their measurement

In a descriptive survey research, the selection and measurement of variables constitute an important task. Ezekiel and Fox (1959), defined a variable as any measurable characteristics which can assume varying or different values in successive individual cases. A research hypothesis contains at least two elements, an independent variable and a dependent variable. Thowsand (1953) defined an independent variable as that factor which is manipulated by the experimenter in his attempt to ascertain its relationship to an observed phenomenon. He further defined a dependent variable as that factor which appears, disappear or varies as an effect of the independent variables.

The independent variables of this study were: age, education, farming experience, farm size, annual income, organizational participation, cosmopolitanism and agricultural knowledge.

The dependent variable was: Use of information sources by the resource-poor farmers

3.3.1 Measurement of independent variables

Procedure used in measuring eight characteristics is described below:

3.3.1.1 Age

Age of a respondent was measured in terms of actual years from his birth day to the interview. One score was assigned for each complete year of a farmer's age. Since Bangladeshi rural people actually do not keep record of their date of birth, age was sometimes based on arbitrary estimates.

3.3.1.2 Education

Education was measured as the ability of a respondent to read and write or the formal education received up to certain standard. A score of zero was given to a respondent who didn't know how to read and write, a score of 0.5 was given to the respondent who could sign only and a score of one was given for each year of formal schooling completed by the respondent i.e. one for completing class one, two for class two and so on.

3.3.1.3 Farming experience

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

3.3.1.4 Farm size

Farm size was estimated in terms of full benefit to the respondent. By considering benefit the farm size of a respondent was measured by using the following formula:

$$\text{Farm size} = A + B + \frac{1}{2}(C + D) + E$$

Where,

A = Homestead area including orchard/Garden

B = Cultivated area owned by the respondent

C = Area shared in (Bogra) by the respondent

D = Area shared out (Bogra) by the respondent

E = Area leased in by the respondent

The farm size of a respondent was calculated in hectare.

3.3.1.5 Annual income

Income of a respondent was measured in monetary term i.e. in Taka. It was computed on the basis of farmer's total yearly earning in thousand taka from farming and non farming sources. At first the yields of all the crops produced in the immediate previous year of the study were converted into cash according to the market price. The value of other farming products encompassing livestock, poultry, fisheries etc. were taken into consideration. Earning from other non farming activities (Services, Business, Labor and others) of the respondents was also included in calculating the income. Yearly earnings from farming and non farming activities were added together to obtain the total income of a respondent. For calculation of income score, 1 was assigned for each one thousand taka of income. Annual income of a respondent was measured by using the following formula:

$$\text{Annual income} = a + b + c = \text{----- taka}$$

Where,

a = Income from agricultural crops

b = Income from domestic animals and fisheries

c = Income from non agricultural sources

3.3.1.6 Organizational participation

Organizational participation of a respondent was measured by the nature and duration of involvement in different organizations as shown in the item no. 6 of the interview schedule (Appendix A). The scale used for computing organizational participation is given below:

Scoring was made in the following manner for participation in each organization.

$$P = \sum N \times D$$

Where P= Participation score

N = Nature of participation

D= Durational score

Nature of participation score was assigned in the following way:

Nature of participation	Score
Not involved	0
Ordinary member	1
Executive member	2
Executive officer (President / Secretary)	3

Duration score was assigned in the following way:

Duration of participation	Score
Nil period	0
One year	1
Two year	2
Three year	3 and so on

As per formula given, the scores on nature of participation are first multiplied by the scores on duration of participation and then products are added together.

3.3.1.7 Cosmopolitaness

Cosmopolitaness of a respondent was measured in terms of his nature of visits to the seven different places external to his own social system. The scale was used for computing the cosmopolitaness score is presented below:

Nature of visit	Weight
Never visit	0
Rarely visit	1
Occasionally visit	2
Frequently visit	3

The cosmopolitaness score of a respondent was determined by adding the scores obtained for his visits to each of the seven locations of places. The definition of “never”, “rarely”, “occasionally” and “frequently” for visit to seven different places are shown in item no. 7 of the interview schedule (Appendix A). The cosmopolitaness scores of an individual could range from 0-21 where 0 indicated no cosmopolteness and 21 indicated very high cosmopolitaness.

3.3.1.8 Agricultural knowledge

It referred to the knowledge gained by the farmers from different sources and also through their experience of farming. In this study, agricultural knowledge of a respondent was measured by asking him questions on different aspects of agriculture. The total assigned score of all questions was 50. The score was given to their response at the time of interview. Answering a question correctly an individual could obtain full score, while for wrong answer he obtained zero score. Thus the agricultural knowledge of a respondent could range from 0 to 50 where 0 indicates no knowledge and 50 indicates high knowledge.

3.3.2 Measurement of dependent variable

Use of information sources by the resource-poor farmers was the dependent variable of the study. The researcher selected three major groups of information sources viz. individual, group and mass comprising of seventeen sources in total. The researcher selected the following sources of information for studying their extent of use by the resource-poor farmers.

- **Individual sources:** Upazila Agriculture Officer / Agriculture Extension Officer, Sub-Assistant Agriculture Officer, Local Leader, Input dealer, Neighbors, Relatives and Experienced farmers.
- **Group sources:** Group discussion, Result demonstration meeting, Agricultural training.
- **Mass sources:** Newspaper, Radio, Television, Poster, Leaflets, Agricultural fair.

The information sources used by the resources-poor farmers was measured on the basis of their opinions regarding the extent of use of the above mention sources in receiving information related to HYV rice cultivation during the immediate passed Boro season. Hence, the use of each of the seventeen information sources was first ascertained by computing their using score. Then the extent of use of information sources score of a respondent for the seventeen sources were added together to ascertain his total score in receiving agricultural information related to HYV Boro cultivation. Four point scale was used to compute the extent of use of information sources. In this regard weight was assigned to each of the four types of responses provided by the resource-poor farmers in the following manner.

Responses	Weight
Always use	3
Occasionally use	2
Rarely use	1
Not at all	0

The definition of “always”, “occasionally”, “rarely” and “not at all” are indicated in item 9(b) of the interview schedule in Appendix- A. The information source use score was obtained by adding his weights for all the information sources. Thus, the use of information sources score of a respondent could range from 0 to 51, where 0 indicated no use of information sources and 51 indicated very high use of information sources in receiving agricultural information related to HYV Boro rice cultivation.

In this regard, farmers maintained contacts with different information sources in receiving information on five practices of HYV rice cultivation. The farmers were asked to mention their contacts with different information sources. Then contacts with each of the seventeen information sources were added together and finally, expressed in percentage.

3.4 Measurement of problems

Ten problems which may be faced by farmers in receiving information on different aspects of HYV Boro rice production were first selected. These were measured by using a five point scale. Scores were assigned to 5 for very high problem, 4 for high problem, 3 for medium problem, 2 for low problem and 1 for very low problem. To ascertain the intensity of problem in receiving information, Problem Facing Index (PFI) was computed by using the following formula:

$$PFI = P_{VH} \times 5 + P_H \times 4 + P_M \times 3 + P_L \times 2 + P_{VL} \times 1$$

Where

PFI = Problem Facing Index

P_{VH} = Percent of farmers having very high problem

P_H = Percent of farmers having high problem

P_M = Percent of farmers having medium problem

P_L = Percent of farmers having low problem

P_{VL} = Percent of farmers having very low problem

As there were 100 respondents, Problem Facing Index (PFI) could range from 100 to 500, where 100 indicates very low problem and 500 indicates very high problem. Solutions regarding different problems were measured on the basis of number of farmers. The farmers who gave the same solution were added together.

3.5 The research instrument

The research design of the study was a descriptive survey research. In order to collect relevant information, an interview schedule was developed considering the objectives of study in view. The schedule was prepared in Bengali for clear understanding to both the interviewer and the interviewee. The schedule contained both closed and opened form of questions. Simple and direct questions were also included in the schedule to obtain necessary information on the selected dependent and independent variables. Appropriate scales were developed to operationalize some selected characteristics of the resource-poor farmers and the dependent variable.

The interview schedule was pre-tested with ten farmers in actual field situation before finalizing the same for collection of data. Necessary correction, additions, alterations, rearrangements and adjustments were made in the schedule based on pretest experience. The schedule was then cyclostyled in its final form for the collection of data. A copy of the interview schedule is presented at Appendix A.

3.6 Data collection procedure

To collect data a house to house survey was conducted by the investigator. All possible efforts were made to explain the purpose of the study to the respondents. Before going to the respondents for interview, they were informed earlier so that they could be available at their respective homes on the schedule date and time. While interviewing a farmer, the researcher took all possible care to establish rapport so that he did not hesitate to furnish proper responses to the question and statements in the schedule. Whenever any respondent faced difficulty in understanding questions, more attention was taken to explain the same with a view to enabling him to answer properly.

Three resource-poor farmers of original sample were not available at the time of interview. As such three farmers were selected from the reserve list for collecting data. No serious problem was faced during data collection. Excellent Co-operation was obtained from the respondents and Sub-Assistant Agriculture Officer. The process of data collection took September 15 to October 14, 2006.

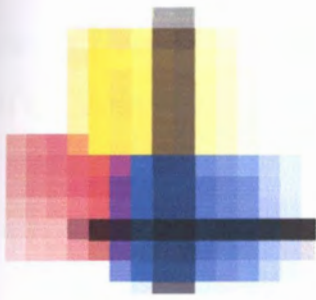
3.7 Compilation of data

At the end of data collection, data were compiled, tabulated and analyzed. The local units were converted into standard units. The qualitative data were transferred into quantitative data by appropriate scoring techniques. The responses of the respondents that were recorded in the interview schedule were transferred into a master sheet to facilitate tabulation. Then the tabulated data were entered into the computer and analysis was done in accordance with the objectives of the study.

3.8 Statistical analysis

Various statistical measures like frequency, counts, number, percentage distribution, range, mean, rank order and standard deviation were used to describe the response against the use of information source and selected characteristics of farmers. The SPSS (Statistical Package for Social Science) program was used to analyze the data. The categories, tables and graphs were also used in presenting data for better understanding.

For determining the association of the selected characteristics of the resource-poor farmers with their use of information source in receiving agricultural information related to HYV Boro rice cultivation, Pearson's Product Moment Correlation was used. Through out the study, 0.05 level of probability with a accompanying 95 percent confidence level was used as the basis for rejecting null hypothesis.



CHAPTER IV

FINDINGS AND DISCUSSION

CHAPTER IV

FINDINGS AND DISCUSSION

Presented in this Chapter are the findings of the study and interpretation of the results. The findings of the study have been discussed separately as per objectives. These include the Characteristics of the resource-poor farmers, extent of use of information sources by the resource-poor farmers, comparative statement on the use of individual, group and mass sources by the resource-poor farmers and relationship between characteristics of resource-poor farmers with their use of information sources in producing HYV Boro rice.

4.1. Characteristics of the resource-poor farmers

The judicious use of agricultural technologies is the key to agricultural progress (Kashem, 1990). Farmers use these modern technologies when they find those useful in their own socio-economic set-up and ago-economic settings. Moreover, farmer's individual characteristics and personal make-up play a vital role in adopting any agricultural practice in the overall technology transfer process. A particular technology might be proved beneficial or suitable for a farmer but he may not be in a position to accept it due to his varied mental make-up and situational factors. The individual characteristics of the farmers may greatly vary and the various factors might have great impact on their use of various information sources. Hence, an analysis of various individual characteristics of the resource-poor farmers may be useful before the findings are discussed. The basic statistical values of different individual characteristics of the resource-poor farmers are shown in Table 4.1

Table 4.1 Salient features of characteristics of the resource-poor farmers

Characteristics	Measuring units	Possible scores	Observed scores		Mean	Standard deviation
			Minimum	Maximum		
Age	Years	Unknown	18	67	42.71	9.44
Education	Schooling	Unknown	0	14	3.51	3.48
Farming experience	Years	Unknown	2	26	12.41	6.81
Farm size	Hectares	0.02–1.0	0.1	0.99	0.43	0.23
Annual income	Thousand Tk. ("000" Tk.)	Unknown	14	91	37.49	15.67
Organization participation	Score	Unknown	0	18	5	4.99
Cosmopolitaness	Score	0–21	1	15	6.03	2.67
Agricultural Knowledge	Score	0–50	12	41	27.29	7.34

4.1.1 Age

Age of the respondents ranged from 18 to 67 years, the mean being 42.71 with standard deviation of 9.44. The farmers of the study group were classified into three categories on the basis of their age as shown in Table 4.2

Table 4.2 Distribution of resource-poor farmers according to their age

Categories	Number	Percent
Young(up to 32 years)	13	13
Middle-age(33 to 52 years)	73	73
Old(53 and above)	14	14
Total	100	100

The highest proportion (73 percent) of the resource-poor farmers was middle-aged compared to 14 percent of them being old and 13 percent young. Thus, 86 percent of the farmers were young to middle aged. Young and middle aged persons are generally more receptive to new ideas and practices. They maintain better communication with various information sources available in the rural areas. However, the older farmers, because of their longer farm experience, might have valuable opinions in regard to modern agricultural technologies. The extension agents can make use of these views and opinions in designing their extension activities.

4.1.2. Education

Education scores of the resource-poor farmers ranged from 0 to 14, the mean being 3.51 and standard deviation 3.48. Based on their education score, the farmers were categorized into 5 groups as shown in Table 4.3

Table 4.3 Distribution of resource-poor farmers according to their education

Categories	Number	Percent
Do not read and write(0)	17	17
Can sign only(0.5)	22	22
Primary level education(1-5)	37	37
Secondary level education(6-10)	21	21
Higher secondary and above(>10)	03	03
Total	100	100

The highest proportion (37 percent) of the resource-poor farmers fell under the category of “primary education” compared to 22 percent falling under “can sign only”, 21 percent “secondary education”, 17 percent “no education” and only 03 percent “above secondary level education”. Farmers need to have some education in order to use the various agricultural information sources properly. It was evident that 61 percent of the resource-poor farmers had education of various degree from primary to above secondary level and 39 percent of the resource-poor farmers were illiterate (No education and can sign only) in the study area. But literacy rate of the country is 65 percent (BBS, 2004). The findings indicate that in the study area, the literacy rate of the resource-poor farmers to be lower than the national level.

4.1.3 Farming experience

Farming experience of the resource-poor farmers ranged from 2 to 26 years, the mean being 12.41 with a standard deviation, of 6.81. Based on their farming experience, the resource-poor farmers were classified into three categories as shown in Table 4.4

Table 4.4 Distribution of resource-poor farmers according to their farming experience

Categories	Number	Percent
Low farming experience(up to 5 years)	16	16
Medium farming experience(6 to 19 years)	64	64
High farming experience(20 and above)	20	20
Total	100	100

The highest proportion (64 percent) of farmers in the study group had medium farming experience, while 20 percent had 20 years or more farming experiences. Only 16 percent of the resource-poor farmers had very few years of farming experience.

Agriculture is a complex business. Therefore, one needs multiple information to take correct decision. One acquires practical knowledge only after a long experience for judicial using the information sources. Moreover, the farming experience of an individual helps him to learn new technologies and may lead him to take correct decisions.

4.1.4 Farm size

Respondents' farm size ranged from 0.1 ha. to 0.99 ha with an average of 0.43 ha and standard deviation of 0.23. In the study, respondents were only resource-poor (land size ranged form 0.02 ha to 1.00 ha) farmers. So, based on their farm size the resource-poor farmers were classified into two categories as shown in Table 4.5

Table 4.5 Distribution of resource-poor according to their farm size (in hectare)

Categories	Number	Percent	Land Holding		
			Total	Average	Percent
Marginal farmer (0.02–0.40 ha.)	56	56	15.14	0.27	34.90
Small farmer (0.41–1.00 ha.)	44	44	28.24	0.64	65.10
Total	100	100	43.38		100

The highest proportion (56 percent) of the resource-poor farmers were marginal farmers whose average farm size was only 0.27 ha. and 44 percent of the farmers were small farmers whose average farm size was 0.64. Figures in the Table also show that 56 percent of the farmers possessed only 34.90 percent of total land and 44 percent of the resource-poor farmers possessed 65.10 percent of total land which shows land distribution among the resource-poor farmers was more or less proportionate. This type of distribution is helpful for different sources to disseminate agricultural information according to farmers need.

4.1.5 Annual income

Annual income score of the Resource-poor farmers was varied from 14 to 91 with a mean of 37.49 and standard deviation, 15.67. Based on their computed scores, the farmers were classified into three categories as shown in Table 4.6

Table 4.6 Distribution of resource-poor farmers according to their annual income (“000” Tk.)

Categories	Number	Percent
Very low income(up to 22)	15	15
Low income(Above 22 to 53)	72	72
Medium income(Above 53)	13	13
Total	100	100

The highest proportion (72 percent) of the resource-poor farmers had Low annual income, while 15 percent had very low income and 13 percent had Medium annual income. The average per capita income of the respondents was lower than the average per capita income of the country i.e. 444 dollar (UNICEF, 2006). This might be due to the fact that the respondents were mainly engaged in farming and they have few other sources of income, such as, selling of labors, small trade, fishing and gardening (Betel-nut). Farmers with very low income generally hesitate to receive information from modern sources because of their inability to make necessary investment. Since, the greater proportion (85 percent) of resource-poor farmers had low to medium

income, it is logical to assume that they might have access to modern information sources such as radio, TV etc. This is so because income is obviously associated with purchasing these types of modern instruments.

4.1.6 Organizational participation

The computed organizational participation scores of the resource-poor farmers ranged from 0 to 18 with the mean score being 5 and standard deviation, 4.99. Distribution of resource-poor farmers according to their organizational participation are shown in Table 4.7

Table 4.7 Distribution of resource-poor farmers according to their organizational participation

Categories	Number	Percent
No participation (0)	37	37
Low participation (1-8)	38	38
Medium participation (9-18)	25	25
Total	100	100

The highest proportion (38 percent) of the resource-poor farmers had low organization participation compared to 37 percent having no participation and only 25 percent, medium participation. It reveals that the majority of the farmers in the study group were in no participation to low organizational participation categories. Usually, resource-rich or educated persons of the society are elected or selected for the posts of different organizations such as school committee, college committee, bazar committee, union porishad etc. Resource-poor farmers receive information from such type of neighbors and thus they might be used as sources of information for the poor farmers.

4.1.7 Cosmopolitaness

The range of the computed cosmopolitaness scores of the respondents varied from 1 to 15, against the possible range of 0 to 21. The mean was 6.03 and the standard deviation was 2.67. Based on the observed cosmopolitaness scores, the farmers were classified into three categories as shown in Table 4.8

Table 4.8 Distribution of resource-poor farmers according to their Cosmopolitaness

Categories	Number	Percent
Low Cosmopolitaness (1-3)	15	15
Medium Cosmopolitaness (4-8)	70	70
High Cosmopolitaness (9 and above)	15	15
Total	100	100

The highest proportion (70 percent) of the respondents had medium cosmopolitaness as compared to 15 percent having low cosmopolitaness and 15 percent, high cosmopolitaness. Cosmopolite people always have more use of information sources and more adoption capacity in any adverse situation which in enhance him to adjust new socio-cultural behavior.

4.1.8 Agricultural knowledge

The agricultural knowledge scores of the resource-poor farmers ranged from 12 to 41 against the possible range of 0 to 50 with an average of 27.29 and standard deviation, 7.34. The resource-poor farmers were classified into three categories on the basis of their agricultural knowledge as shown in Table 4.9

Table 4.9 Distribution of resource-poor farmers according to their agricultural knowledge

Categories	Number	Percent
Low agricultural knowledge (up to 190)	17	17
Medium agricultural knowledge (20–350)	67	67
High agricultural knowledge (21 and above)	16	16
Total	100	100

Two-thirds (67 percent) of the resource-poor farmers had medium agricultural knowledge compared to 17 percent of them having low knowledge and 16 percent, high agricultural knowledge. It can be clearly seen from the table that an overwhelming majority of the resource-poor farmers (83 percent) had medium to high agricultural knowledge. Use of information media helps to increase knowledge. On the other hand, knowledge influence adoption of any improved technology.

4.2 Extent of use of information sources by the resource-poor farmers having information for producing HYV Boro rice

This section deals with different information sources used by the HYV rice growers (resource-poor farmers) in receiving information on different improved practices. Seventeen information sources were used to investigate in this study. Farmers maintained contacts with these seventeen information sources for getting agricultural information on the basis of their necessity. These contacts appeared in Table 4.10

Table 4.10 Distribution of citations of information sources used by the resource-poor farmers in receiving information on different practices of HYV Boro rice production

Information sources		Number of contacts for receiving information					Total	Percent
		HYV - S	SP	BF	PP	IR		
Individual	UAO / AEO	0	0	7	7	6	20	1.11
	SAAO	36	4	31	42	19	132	7.30
	Local leader	4	0	3	4	2	13	0.72
	NGO'S worker	9	8	8	3	0	28	1.55
	Input dealer	48	8	47	49	0	152	8.41
	Experienced farmer	57	9	55	78	61	260	14.38
	Neighbors	74	20	54	77	48	273	15.10
	Relatives	59	23	52	52	58	244	13.50
Group	Group discussion	49	17	46	31	64	207	11.45
	Result demonstration meeting	28	0	27	26	4	85	4.70
	Agricultural training	17	10	15	12	4	58	3.21
Mass	Daily newspaper	4	2	3	4	0	13	0.72
	Radio	42	30	32	28	24	156	8.63
	Television	23	15	17	13	10	78	4.31
	Agricultural poster	13	3	12	14	0	42	2.32
	Leaflet	0	0	5	15	0	20	1.11
	Agricultural fair	8	7	7	5	0	27	1.49
Total		471	156	421	460	300	1808	100
Percent		26.05	8.63	23.29	25.44	16.59	100	

HYV-S = High Yielding Variety of Seed

SP = Seed Preservation

BF = Balanced doses of Fertilizer

PP = Plant Protection measures

IR = Irrigation

Table 4.10 indicates that for all practices, contacts with neighbors (15.10 percent) was identified as the highest used information source and it was closely followed by experienced farmer (14.38 percent), relatives (13.50 percent), group discussion (11.45 percent), radio (8.63 percent), input dealer (8.41 percent) and Sub-Assistant Agriculture officer (7.30 percent). The least used information sources were local leader (0.72) percent and daily newspaper (0.72 percent) jointly. The resource-poor

farmers also made contacts with result demonstration meeting (4.70 percent), television (4.31 percent), agricultural training (3.21 percent), agricultural poster (2.32 percent), NGO'S worker (1.55 percent), agricultural fair (1.49 percent), UAO/AEO (1.11 percent), and leaflet (1.11 percent) in receiving information on different practices of HYV Boro rice cultivation. The information sources are graphically presented in Fig.4.1

Data presented in Table 4.10 also indicate that among the five practices of HYV Boro rice cultivation, the highest contacts made for HYV seed (26.05 percent) which was followed by Balanced fertilizer dose (23.29 percent), Plant protection measure (25.44 percent), Irrigation management (16.59 percent) and Seed preservation (8.63 percent).

Based on the above findings, it was concluded that contacts with individual sources (62.06 percent) ranked first compared to contact with group (19.36 percent) and mass sources (18.58 percent) which are presented in Table 4.11. The three groups of information sources are also graphically presented in Fig. 4.2

Table 4.11 Comparison of use of individual, group and mass sources by the resource-poor farmers in having information in producing HYV Boro rice

Information sources	Total contacts	Percent	Rank order
Individual sources	1122	62.06	1
Group sources	350	19.36	2
Mass sources	336	18.58	3

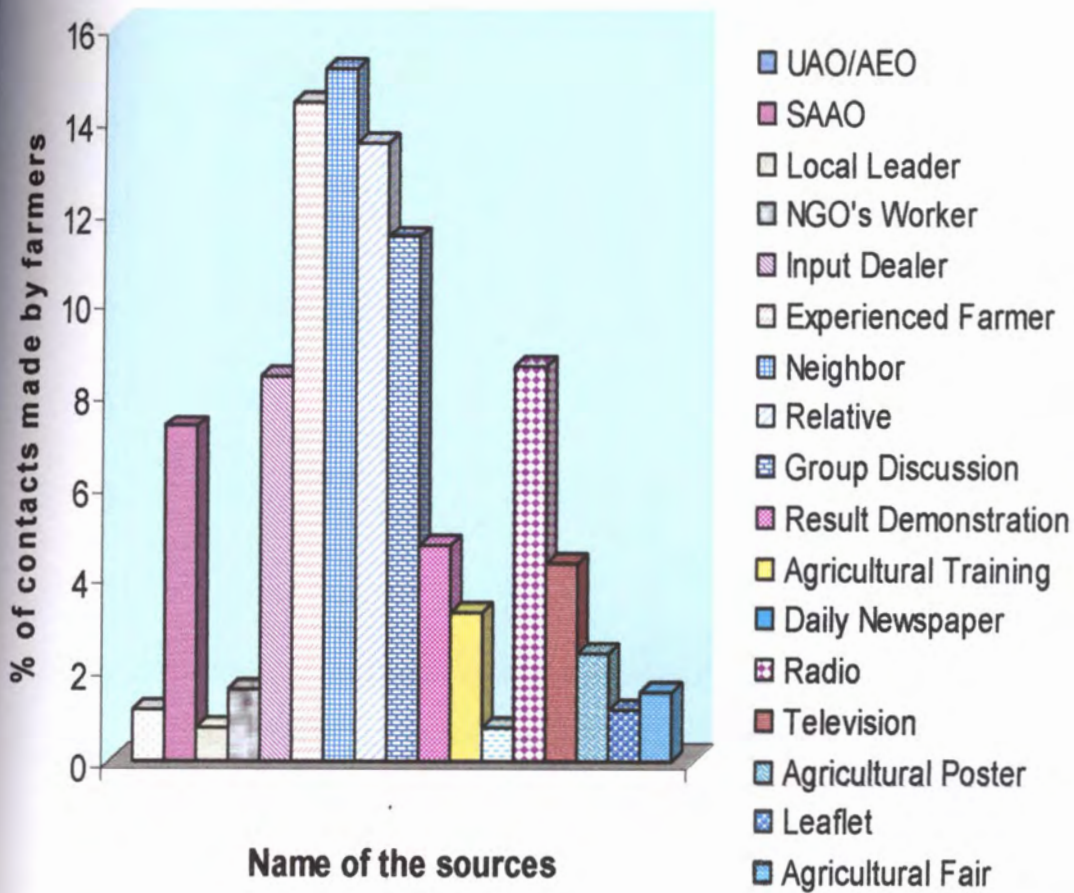


Fig. 4.1 Graphical representation of use of information sources by the resource-poor farmers

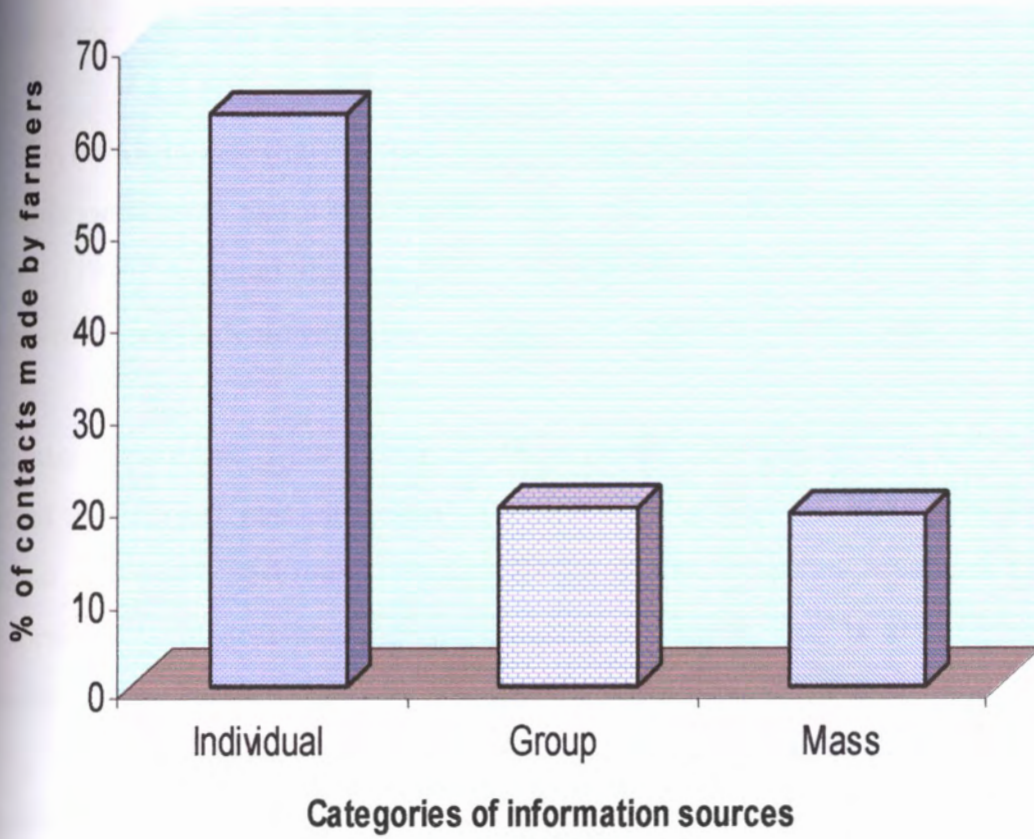


Fig. 4.2 Graphical representation of use of three groups of information sources

Among the individual sources the respondents of the study area mostly used neighbors, experienced farmers, relatives and input dealers for getting information. In case of group sources, the respondents mostly used group discussion and result demonstration meetings. On the other hand radio was the highest used mass media. This may be due to the reason that the study area belongs to river-based region of Bangladesh. Usually the rate of radio listener is higher in the river-based area than those of the farmers in other areas.

Ullah (1996) found that contact with Block Supervisors was the highest used information sources and it was closely followed by radio, neighbors and friends. But, Khalil (1996) reported that neighbors was used to the highest extent and it was followed by result demonstration meeting, Block Supervisor and Bangladesh Betar.

Rahman (1996) and Ullah (1996) again showed individual information sources also ranked as first but mass information sources and group information sources in the second and third positions, respectively. Actually, personal localized media play important role in decision and implementation stages. This is also revealed in the present study.

Considering all the practices, the use of information sources scores of the resource-poor farmers ranged from 6 to 37, against the possible range 0 to 51. The mean value and the standard deviation were 15.79 and 8.25, respectively. The farmers were classified into three categories on the basis of their extent of use of information sources as shown in Table 4.12

Table 4.12 Distribution of the resource-poor farmers on the basis of their extent of use of information sources

Dependent variable	Observed range	Categories of use	Distribution of resource-poor farmers		Mean	SD
			Number	Percent		
Use of information sources	06-37	Low use (up to 7 Scores)	05	5	15.79	8.25
		Medium use (8-24 Scores)	82	82		
		High use (25 Scores & above)	13	13		
Total			100	100		

The highest proportion (82 percent) of the resource-poor farmers fell in the medium use category while 13 percent of the respondents fell in the high use category. Only 5 percent of the resource-poor farmers fell in the low use category of information sources. This means that all the resource-poor farmers of the study area maintained moderate contacts with seventeen selected information sources for receiving agricultural information related to HYV rice production during Boro season.

4.3 Pattern of use of information sources according to farm categories

Pattern of use of information sources were measured according to farm categories. In this study, farm categories were: Marginal and small. It was mentioned earlier that out of 100 farmers (Sample size), 56 farmers fell in the marginal category while 44 farmers fell in the small farmers category. Pattern of use of information sources according to farm categories are presented in Table 4.13

Table 4.13 Pattern of use of information source according to farm categories

Information sources	Farm size						Total users
	Marginal			Small			
	Users	Percent	Rank	Users	Percent	Rank	
UAO / AEO	2	0.71	14.5	5	1.63	14	7
SAAO	12	4.24	7	31	10.13	4	43
Local leader	3	1.06	13	1	0.33	17	4
NGO'S worker	5	1.77	11.5	4	1.31	15	9
Input dealer	28	9.89	5	21	6.86	7	49
Experienced farmer	44	15.55	3	40	13.07	1	84
Neighbors	52	18.37	1	37	12.09	2	89
Relatives	45	15.90	2	35	11.44	3	80
Group discussion	38	13.43	4	30	9.80	5	68
Result demonstration meeting	9	3.18	8	19	6.21	8	28
Agricultural training	8	2.83	9	11	3.59	10	19
Daily newspaper	1	0.35	16	3	0.98	16	4
Radio	22	7.77	6	29	9.48	6	51
Television	7	2.47	10	18	5.88	9	25
Agricultural poster	5	1.77	11.5	9	2.94	11	14
Leaflet	0	0	17	7	2.29	12	7
Agricultural fair	2	0.71	14.5	6	1.96	13	8
Total	100			100			

Data presented in Table 4.13 indicate that maximum marginal farmers (52) received information from neighbors and it was closely followed by relatives (45), group discussion (38), experienced farmers (44), input dealer (28), radio (22), Sub-Assistant Agriculture Officer (12) and result demonstration meeting (9).

But experienced farmers (40) was highest in case of small farmers and followed by neighbors (37), relatives (35), Sub-Assistant Agriculture Officer (31), group discussion (30), radio (29), input dealer (21) and result demonstration meeting (19).

It revealed that rank order of experienced farmers and Sub-Assistant Agriculture Officer was upgraded from 3 to 1 and 7 to 4, respectively in case of small farmers. So, use of government sources is higher in case of small farmers compared to marginal farmers. Small farmers also like to receive information from knowledgeable persons. From the above discussion it was revealed that more the resources of farmers, the

more their utilization of cosmopolite sources. So, possibility of getting modern technology might be higher among the resource-rich farmers.

4.4 Relationship between characteristics of the resource-poor farmers and their use of information sources

The purpose of this section is to examine the relationship between eight selected characteristics of the resource-poor farmers and their use of information sources in receiving information related to HYV Boro rice cultivation. The characteristics included:

1. Age.
2. Education.
3. Farming experience
4. Farm size
5. Annual income
6. Organizational participation
7. Cosmopolitaness
8. Agricultural knowledge

Each of the characteristics constituted an independent variable, while the use of information sources by the resource-poor farmers was the only dependent variable in this study. Pearson's Product Moment Co-efficient of correlation (r) was used to explore if there was statistically significant relationship between the selected characteristics and use of information sources. Five percent (0.05) level of significance was used as the basis for rejection of a null hypothesis. The summary of the results of correlation analyses is presented in Table 4.14 and the correlation matrix is given in Appendix-C.

Table 4.14 Co-efficient of correlation showing relationship between the characteristics of resource-poor farmers and their use of information sources

Dependent variable	Characteristics of the resource-poor farmers	Co-efficient of Correlation (r)
Use of information sources	Age	0.022 ^{NS}
	Education	0.494**
	Farming experience	0.252*
	Farm size	0.507**
	Annual income	0.606**
	Organizational participation	0.390**
	Cosmopolitaness	0.376**
	Agricultural knowledge	0.353**

NS = Not Significant

* = Significant at 0.05 level

** = Significant at 0.01 level

4.4.1 Age and use of information sources

The hypothesis stated in this regard was “There is no relationship between age of the resource-poor farmers and their use of Information sources”. The observed value of “r” = 0.022 showed insignificant relationship between age of the resource-poor farmers and their use of information sources. Therefore, the null hypothesis could not be rejected and it was concluded that no relationship existed between age of the resource-poor farmers and their extent of use of information sources. This might be reason that irrespective of their age, all respondents were more or less similar in using information sources to seek information on HYV Boro rice production.

Similar findings were revealed by Roy (1981), Sarker (1995), Khan (1996), Ullah (1996), Rahman (1996) and Khalil (1998) in their respective studies. Thus all of the other five studies bear a consistency in the findings with that of the present one. But

Islam (1995) and Karim (2005) reported that the age level had certain degree of influence upon the growers in using the information sources.

4.4.2 Education and use of information sources

The null hypothesis stated early was "There is no relationship between level of education of the resource-poor farmers and their use of information sources". The computed value of "r" was 0.494, which showed a positive and significant relationship between the education of resource-poor farmers and their use of information sources. Based on the above findings the null hypothesis was rejected and hence, it is concluded that the education of the respondents had significant positive relationship with their use of information sources. This indicates that the higher the education, the more extent of use of information sources. Education upgrades individuals in all aspects. Education enables individuals to gain knowledge and thus, increase their power of understanding, consequently their out look is broadened and horizon of knowledge is expanded. The educated persons used to have frequent contact with radio, TV, progressive farmers, government sources, printed materials and are exposed to various external sources which increase their power of understanding compared to the individuals with less educational background.

Similar findings were also found by Bhiuyan (1988), Kasem and Jones (1988), Sarker (1995), Ullah (1996) and Anissuzzaman (2003) in their respective studies.

4.4.3 Farming experience and use of information sources

According to null hypothesis as stated that "There is no relationship between farming experience of the resource-poor farmers and their use of information sources." The "r" value between farming experience and use of information sources was 0.252. The value showed a positive and significant relationship between the two variables. Therefore, the null hypothesis was rejected and concluded that farming experience of the respondents had significant positive relationship with their use of information sources. This means that the more the farming experience of the resource-poor farmers, the more will be their use of information sources for getting agricultural information. Perfection is seldom achieved without farming experience. Farming

experience must be enough; otherwise there will be wrong selection of information sources. To run agricultural business smoothly farmers have to identify the sources which provide more effective and credible information. This is possible when one acquires practical knowledge only after a long experience. Thus farming experience helps a individual to get reliable information and may lead him to take correct decisions.

Khalil (1998) mentioned that farming experience had no relationship with the use of information sources.

4.4.4 Farm size and use of information sources

The null hypothesis stated in this regard was "There was no relationship between farm size of the resource-poor farmers and their use of information sources."

The "r" value between the farm size and use of information sources was 0.507. The value showed a positive and significant relationship between farm size and use of information sources. Therefore, the null hypothesis was rejected and the existing relationship between the concerned variables indicates that use of information sources by the resource-poor farmers is dependent on their farm size. It means that larger the farm size of the resource-poor farmers, greater was their use of information sources in producing HYV rice. Farmers with big farm size have opportunity to take information on some sophisticated technologies which can be applied only in big field, such as-use of Tractor. But, small farmers are reluctant to take information on such type of technology from different sources.

Ahamed (1977), Hooda (1981), Bhuiyan (1988), Sarker (1995) and Rahman (1996) observed similar relationship in their respective studies. But Anisuzzaman (2003) mentioned that farm size had no significant relationship with the use information media.

4.4.5 Annual income and use of information sources

According to null hypothesis as stated that "There is no relationship between annual income of the resource-poor farmers and their use of information sources."

The "r" value between the annual income and use of information sources was 0.606. The value indicated a positive and significant relationship. Hence, the null hypothesis was rejected. This means that use of information sources increased with the rise of annual income of resource-poor farmers. Explanation might be that, higher incomes enable them to invest more for use of information sources in producing HYV Boro rice. Annual income is a vital factor for farming enterprise. Individuals in the society respect the farmer who has the higher income. He also can invest more money in his farming activity; can take risk in using some sources.

Sowhney (1969), Hossain and Crouch (1992), Uddin (1993), Rahman (1996), Karim (2005) found the similar positive relationship. But Bhuiyan (1988) concluded that income was not related to the comprehensive use of communication media by the farmers.

4.4.6 Organization participation and use of information source

According to null hypothesis as stated that "There is no relationship between organizational participation of the resource-poor farmers and use of their information sources."

The "r" value being 0.390 showed a positive and significant relationship between organizational participation of the farmers and their use of information sources in receiving information. Therefore, the null hypothesis was rejected suggesting that the organizational participation of the resource-poor farmers is strongly related to the use of information sources in receiving information on HYV Boro rice production technology. Organizational participation helps the respondents to get opportunity to increase their knowledge and experience through mutual interactions and sharing of ideas and opinions among them. Thus, the organizational participation of the resource-poor farmers helped them to improve their out look and exposure towards improved farming practices which lead them to use different information sources to obtain information related to HYV Boro rice production.

Sarker (1995), Rahman (1996), Khan (1996) and Karim (2005) found similar relationship in their respective studies. But Ullah (1996) observed that organizational participation had no significant relationship with the use of information media.

4.4.7 Cosmopolitanism and use of information sources

The null hypothesis stated in this regard was "There is no relationship between cosmopolitanism of the resource-poor farmers and their use of information sources."

The calculated value of "r" (0.376) showed a positive and significant relationship between cosmopolitanism of the resource-poor farmers and their use of information source in receiving information. The statistical analysis rejected the concerned null hypothesis. The existing relationship between the concerned variables indicated that with the increase of cosmopolitanism of the resource-poor farmers, their use of information sources also increased. A cosmopolite person communicates with different external source. He or she used to visit his or her own union, other upazila and different important places. This helps to be exposed to different information sources. So, the variables are dependent on each other.

Similar findings were found by Hossain and Crouch (1992), Ullah (1996), Rahman (1996) and Anisuzzaman (2003). But Uddin (1993) found that no relationship existed between cosmopolitanism and use of information sources.

4.4.8 Agricultural knowledge and use of information sources

According to null hypothesis as stated that "There is no relationship between agricultural knowledge of the resource-poor farmers and their use of information sources."

The calculated value of 'r' (0.353) showed a positive and significant relationship between agricultural knowledge of the resource-poor farmers and their use of use of information sources in receiving information related to HYV Boro rice cultivation. The statistical analysis rejected the concerned null hypothesis. The existing relationship between the concerned two variables indicated that with the increase of agricultural knowledge of the resource-poor farmers, their use of information sources for getting information also increased. This means that the more the agricultural knowledge of the resource-poor farmers, the more will be their use of information sources in producing HYV rice during Boro season.

Paul (1989), Kasem and Halim (1991), Sarker (1995) and Karim (2005) found the similar positive relationship in their respective studies.

4.5 Problems faced by the resource-poor farmers in having information in producing HYV Boro rice

It is obvious that farmers face a number of problems or constraints in receiving agricultural information from various sources. The extent and types of problems are diversified as they are mostly controlled by communication behavior of communicator and receiver. However, 10 problems related to use of different sources were selected. In order to understanding the comparative importance, the problems have been arranged in rank order according their Problem Facing Index (PFI) as shown in Table 4.15

Table 4.15 Ranking of problems faced by the resource-poor farmers in having information in producing HYV Boro rice

SL. No.	Problems	Resource-poor farmers					PFI	Rank order
		V.H	H.	M.	L.	V.L		
1	Unavailability of agricultural training	42	38	20	0	0	422	1
2	Inadequate farm and home visit by extension personnel	40	39	21	0	0	419	2
3	Inadequate number of demonstration plot	38	33	24	5	0	404	3
4	Inadequate agricultural information in radio and television	35	23	26	19	7	390	4
5	Extension personnel give more attention towards a few big and progressive farmers	30	30	24	12	4	370	5
6	Dispersion of information from farmers to farmers may be distorted	26	18	31	15	10	335	6
7	Innovation do not reach at the moment to farmers	25	17	18	21	19	308	7
8	Input cost may be increased due to communicate with different sources at distance places and it is also time consuming	14	19	35	20	12	303	8
9	Effect of government information sources is not satisfactory	11	20	22	15	32	263	9
10	Inadequate information on electricity supply, input availability and disease forecasting	9	12	17	50	12	256	10

By and large, it reveals that “Unavailability of agricultural training” was the top most important problem which secured 1st rank with PFI of 422. This top most problem might have caused due to lack of planning, trainers and farmer’s disinterest towards new innovation. The second problem was “Inadequate farm and home visit by extension personnel” with PFI of 419 and “inadequate number of demonstration plot” ranked 3rd according to Problem Facing Index. “Inadequate information on electricity supply, input availability and weather forecast” was the lowest ranked problem according to Problem Facing Index. All the problems made them disinterested in using more information sources to know more about HYV rice production technology. Khalil (1998) and Rahman (1996) also observed near about similar types of problems.

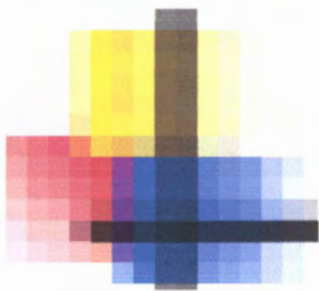
Suggested solutions

The farmers were also asked to give some suggestions to minimize the problems faced by them in receiving agricultural information. The suggestions of the respondents in this regard are presented in Table 4.16

Information presented in Table 4.16 indicates that most of the problems could be solved to a greater extent if initiatives are taken by the extension personnel of DAE working at upazila level.

Table 4.16 Rank order of the probable suggestions mentioned by the resource-poor farmers

Sl. No.	Suggestions	No. of citations	Percent	Rank order
1	Short training course for the resource-poor farmers, input dealers and experienced farmers could be arranged so that they can improve their existing knowledge and skills	57	18.27	1
2	Timely and regular farm and home visit by SAAO should be made	54	17.31	2
3	Extension personnel should be unbiased in disseminating agricultural information	43	13.78	3
4	More demonstration activities on different farming operations should be conducted at farmers' field	41	13.14	4
5	Introduce new idea when it can be used in some serviceable manner	38	12.18	5
6	Adequate agricultural programme should be arranged in radio and television. In this regard emphasis should be made the farming of resource-poor farmers	33	10.58	6
7	Innovation should be easily understood form and suited to the local conditions	20	6.41	7
8	Select some progressive farmers and assist them to maintain accurate information on innovation	16	5.13	8
9	Decentralization of agricultural information center is necessary for rapid dissemination of information	7	1.24	9
10	Advance information on electricity supply and natural disaster	3	0.96	10



CHAPTER V

SUMMARY, CONCLUSION AND RECOMMENDATIONS

CHAPTER V

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Summary

5.1.1 Introduction

Now a days agricultural information is considered by the farmers as an important input of agricultural production like other inputs. From past research it was found that the flow of agricultural information among the farmers of our country is inadequate and slow. The consequential reasons for poor information sources use in receiving agricultural information related to HYV rice cultivation resulting poor yield of rice. Moreover, the farmers, particularly the resource-poor farmers, have not been trying the modern technologies like improved agricultural practices. But they constitute the majority of the total farming population of the country. Therefore, in bringing about technological changes among the resource-poor farmers, it is essential to make out their information sources using behavior in receiving agricultural information. Considering the national importance and economic contribution made by the resource-poor farmers, the present piece of research work was designed.

The present study was undertaken in Mehendiganj upazila of Barisal district to:

(i) Determine and describe the characteristics of the resource-poor farmers, (ii) Determine and describe the extent of use of different information sources by the resource-poor farmers in producing HYV Boro rice, (iii) Identify the pattern of use of information sources according to farm categories, (iv) Assess the relationship between the selected characteristics of the resource-poor farmers such as age, education, farming experience, farm size, annual income, organizational participation, cosmopolitaness, agricultural knowledge and their extent of use of information sources in producing HYV Boro rice and (v) Assess the problems faced by the resource-poor farmers in having different information sources with probable solutions as suggested by the respondents.

5.1.2 Methodology

From a population of 465, a total number of 100 HYV Boro rice farmers (resource-poor farmers) of two villages of Charekkaria union under Mehendiganj upazila of Barisal district were selected. Data were collected by using a interview schedule from September 15 to October 14, 2006. The interview schedule contained both open and closed form of questions. Collected data were coded, compiled, tabulated and analyzed in accordance with the objectives of the study. Statistical measures such as frequency, counts, number, percentage distribution, range, mean, rank order and standard deviation were used to determine the extent of use of different information sources by the resource-poor farmers and their selected characteristics. Correlation analysis was used as principal statistical methods for analyzing the data. All these analyses were done by a computer using a package SPSS.

5.1.3 Summary of findings

5.1.3.1 Characteristics of the resource-poor farmers

Findings in respect of the selected characteristics of the resource-poor farmers are summarized below:

Age

Age of the resource-poor farmers ranged from 18 to 67 years with a mean value of 42.71 and standard deviation, 9.44. The highest proportion (73%) of the resource-poor farmers was in the middle age category as compared to 14% of old age and 13% young.

Education

Education attainment of the respondents ranged from no schooling (0) to 14 years of schooling with a mean of 3.15 and standard deviation of 3.48. The highest proportion (37%) of the resource-poor farmers had primary level education followed by 22% with can sign only, 21% with secondary level education, 17% with no schooling and only 3% with about secondary level education.

Farming experience

Farming experience ranged from 2 to 26 years with a mean value of 12.41 and standard deviation of 6.81. The highest proportion (64%) of the resource-poor farmers

and medium farming experience followed by high farming experience (20%) and low farming experience (16%).

Farm size

Farm size of the respondents ranged from 0.10 to 0.99 hectares with an average of 0.43 hectares and standard deviation was 0.23. The highest proportion (56%) of the resource-poor farmers were marginal farmers with the average land holding of 0.27 ha possessing 34.90% of the total land compared to 44% of the resource-poor farmers were small farmer possessing 65.10% of the total land.

Annual income

Respondents' annual income ranged from 14 to 91 thousand in taka with an average of 37.49 and standard deviation was 15.67. 72% of the total resource-poor farmers had low income while 15% of them had very low income and 13% had medium income.

Organization participation

Organizational participation scores of the resource-poor farmers ranged from 0 to 18 with an average of 5 and standard deviation was 4.99. The highest proportion (38%) of the resource-poor farmers had low participation as compared to 37% having no participation and 25% high participation.

Cosmopolitaness

Cosmopolitaness scores of the resource-poor farmers varied from 1 to 15 having an average 6.03 and standard deviation was 2.67. The highest proposition (70%) of the resource-poor farmers had medium cosmopolitaness compared to 15% having low cosmopolitaness and 15% having high cosmopolitaness.

Agricultural knowledge

The agricultural knowledge score of the resource-poor farmers ranged from 12 to 41 with an average 27.29 and standard deviation was 7.38. The highest proportion (67%) of the resource-poor farmers had medium agricultural knowledge as compared to 17% with low agricultural knowledge and 16% with high agricultural knowledge.

5.1.3.2 Extent of use of information sources by the resource-poor farmers in producing HYV Boro rice

Resource-poor farmers generally used few number of information sources in receiving information. The selection of information sources by the resource-poor farmers varied from person to person, situation to situation. It also varied on the basis of nature, validity, reliability, availability and even personal liking and disliking. The contacts of the resource-poor farmers regarding the use of information sources in receiving information were measured by assigning appropriate scores. The major information sources with which the resource-poor farmers made maximum contacts were neighbors, experienced farmers, relatives, group discussion, radio, input dealer and Sub-Assistant Agriculture Officer. Contacts also maintained with result demonstration meeting, television, agricultural training, agricultural poster, NGO'S worker to a moderate extent. The resource-poor farmers made contacts with agricultural fair, leaflet, UAO/AEO, local leader and daily newspaper to the lowest extent. Moreover, contacts with individual sources (62.06%) placed highest as compared to 19.36% contacts with group sources and 18.58% contacts with mass sources in receiving five types of information related to HYV Boro rice production.

It was also found that 82 percent of the respondents had medium use of information sources while 13 percent had high use of information sources and 5 percent had low use of available information sources.

5.1.3. 3 Pattern of use of information sources according to farm categories

It revealed that neighbors were first information source for marginal farmers followed by relatives, experienced farmers, group discussion, input dealer, radio and Sub-Assistant Agriculture Officer. On the other hand, experienced farmers were first information source for small farmers which were closely followed by neighbors, relatives, Sub-Assistant Agriculture Officer, group discussion, radio and input dealer.

5.1.3.4 Summary of hypothesis testing

The null hypotheses were tested to examine the relationship of eight selected characteristics of the resource-poor farmers with their use of information sources. The results of hypotheses testing are briefly presented below:

Education, farming experience, farm size, annual income, organizational participation, cosmopolitanism and agricultural knowledge had significant and positive relationships with extent of use of information sources while age of the resource-poor farmers had no significant relationship with their use of information sources in receiving information related to HYV Boro rice cultivation.

5.1.3.5. Problems faced by the resource-poor farmers in having information in producing HYV Boro rice with solutions as suggested by the farmers

The most serious problem faced by the resource-poor farmers in having information was unavailability of agricultural training which was followed by inadequate farm and home visit by extension personnel, inadequate number of demonstration plot, inadequate agricultural information in radio and TV, extension personnel give more attention towards a few big or progressive farmers, dispersion of information from farmers to farmers may be distorted, innovation do not reach at the moment to farmers, input cost may be increased due to communicate with different sources at distance places, effect of government sources is not satisfactory and inadequate information on electricity supply, input availability and weather forecast. Important suggestions mentioned by the farmers were short training course, timely and regular farm and home visit and unbiasedness of extension personnel.

3.3 Conclusion

Following conclusion were drawn on the basis of findings and their logical interpretation in the light of other relevant facts:

1. The study indicated that most of the respondents (82 percent) maintained medium use of various information sources for receiving agricultural information. This is not enough for maintaining adequate flow of farm information among the farmers. The findings lead to the conclusion that the farmers have medium access to the information sources in receiving agricultural information for performing various farming operations.
2. As regards contact with available information sources, it was found that contacts with individual sources ranked first followed by group and mass sources. It is remarkable that printed material were the least important among the media used by rice growers. It leads to the conclusion that low investment capacity, lack of proper education, unavailability of printed materials, traditional norms, values and beliefs encourage them to collect information from neighbors, experienced farmers, relatives etc. So, emphasis should be given on the above mentioned problems.
3. As regards pattern of use of information sources according to farm category, it was found that neighbors was first information source for marginal farmers and experienced farmer was first information source for small farmers. The findings lead to the conclusion that the resource-poor farmers mostly preferred localities and non-professional sources in receiving agricultural information.
4. The study indicated that age of the resource-poor farmers had no significant effect on the use of information sources. It leads to the conclusion that age of the resource-poor farmers had no relationship with the selection of information sources by the resource-poor farmers in receiving various information related to HYV Boro rice cultivation.

6. Education of the resource-poor farmers had a positive and significant relationship with the use of communication sources. This lead to the conclusion that the more the level of education of the farmers the more will be their choice of selecting information sources for obtaining information.
7. Farming experience had positive and significant relationship with the use of information sources. This lead to conclusion that the more the farming experience of the farmers, the more was their use of various information sources in receiving information related to HYV Boro rice production.
8. Farm size of the resource-poor farmers had a positive significant relationship with their use of information sources which leads to the conclusion that farmers with large farm size use higher number of information sources.
9. Annual income had significant positive correlation with the use of information sources which indicates those farmers has higher annual income used more information sources.
10. Organizational participation of the respondents had a positive significant relationship with their use of information sources. The finding leads to the conclusion that the farmers with more organizational exposure are expected to have more interest in using different information sources.
11. Cosmopolitaness of the farmers had positive significant relationship with the use of information sources. It leads to the conclusion that cosmopolitaness helps an individual to collect new ideas and information from different sources.
12. Agricultural knowledge of the respondents had positive significant relationship with the use of information sources in receiving agricultural information implied that those farmers had more agricultural knowledge; they have better orientation to different information sources for getting information.

12. While asked about the problems faced by the farmers in having information they mentioned that unavailability of agricultural training, inadequate farm and home visit, inadequate number of demonstration, inadequate information in radio and TV were their major difficulties in having information on HYV Boro rice. On the other hand, the highest proportion of the farmers opined that the short training course can solve their problems to a great extent.

5.4 Recommendations

5.4.1 Recommendations for policy implications

On the basis of the findings and conclusion of the study, the following recommendations for policy implication are made:

1. It was evident that the resource-poor farmers who produce HYV Boro rice relied greatly on localized sources of information such as neighbors, experienced farmer, relatives to receive agricultural information. The extension worker should therefore, develop opinion leadership role effectively in the change programs.
2. Result demonstration method should be strengthen in disseminating information as it create more confidence among the HYV rice farmers through practical observation.
3. Group discussion was found to be important medium in communicating agricultural information to the farmers. The extension agent shall act as a motivator and resource person and encourage them to take action. Therefore, group approach of extension could effectively be used by different extension agencies in disseminating farm information.
4. The study reveals that the resource-poor farmers having better education could improve the existing status of using information sources. As majority (61%) of the farmers in the study area had primary to above secondary level of education,

information sources such as mass media could be effectively used to disseminate farm information to the target participants. It is necessary to design, formulate and display more and more production oriented programs in radio and television in such a fashion that farmers can enjoy the programs and can learn many technical aspects of different agricultural technologies.

5. Arrangements to provide functional education to the farmers particularly to the young and middle-aged farmers should be made. This will help to change attitude, behavior and out look of the future farmers. It will also minimize the cost of extension service in future as the educated farmers are able to adjust in new situation.
6. Extension service in the locality should be established, its adequate contact with farmers which will have an impact on HYV rice intensification.
7. Considering the entire situation, it is recommended that utmost care should be taken by the DAE and other development agencies in handling information sources with the resource-poor farmers. It should be recommended that failure of one effort may lead to reduce credibility of that source of information which may take long time to overcome psychological barriers to use of information sources.

5.4.2 Recommendations for future study

Short term and sporadic study being conducted in some specific location cannot provide all information for proper understanding about different activities and related matters. Future studies should be undertaken covering more dimensions in the related matters. The following recommendations are suggested in this connection:

1. It is strongly felt that study of this nature be replicated in other parts of Bangladesh. This recommendation is made because the study area at

Mehendiganj upazila in Barisal district is not a typical of the situation in the entire country.

2. This study investigated the effect of eight characteristics of the resource-poor farmers on their use of information sources. The extent of use of information sources might be related with various personal, social, psychological, cultural, economic and situational factors of the farmers. It is therefore, recommended that further study should be conducted involving other variables in this regard.
3. This study dealt with only five selected improved practices in HYV Boro rice cultivation. Further study should be undertaken including other practices in other crops.
4. The usefulness of information sources specially print and electronic media in the diffusion of farm practices should be ascertained on an experimental design.
5. On the basis of the characteristics pattern of farming population, more researches should be conducted to investigate the comparative effectiveness of information sources with other extension method and also identify the factors influencing the use of information sources, its utilization as well as effectiveness in receiving farm information by the resource-poor farmers.

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APPENDIX A

DEPARTMENT OF AGRICULTURAL EXTENSION & INFORMATION SYSTEM
SHER-E-BANGLA AGRICULTURAL UNIVERSITY
SHER-E-BANGLA NAGAR, DHAKA - 1207

An interview schedule for a research study entitled

“Information Sources Used By The Resource Poor Farmers In Producing HYV Boro Rice”

[The information collected through this interview schedule will be kept confidential
and only be used for academic purpose]

Name of the respondent SL. No

Father's Name Date

Village :

Union :

Upazila :

District :

[Please provide the following information]

1. Age

What is your present age?

..... years months.

2. Education

Please mention your educational qualification

(a) Don't know how to read and write

(b) Can sign only

(c) I studied up to. class

3. Farming experience

Please mention your farming experience

How long you grew HYV rice during Boro season?

..... years.

4. Farm size

Please furnish area of your land according to use

Sl. No.	Land use/Type of Land	Land area	
		Local Unit	Hectare(ha.)
A.	Homestead area including orchard/Garden		
B.	Cultivated area owned by the respondent		
C.	Area shared in (Bogra) by the respondent		
D.	Area shared out (Bogra) by the respondent		
E.	Area leased in by the respondent		
Total = $A+B+\frac{1}{2}(C+D)+E$			

5. Annual income

Please particulars about your annual income from the following sources

A. Income from agricultural corps

Sl. No.	Name of crops	Production (kg)	Value per unit (Taka)	Total value (Taka)
1.	Aus			
2.	Aman			
3.	Boro			
4.	Wheat			
5.	Maize			
6.	Jute			
7.	Pulse crops			
8.	Oil corps			
9.	Spices			
10.	Vegetables			
11.	Sugar cane			
12.	Fruits			
13.	Others (specify)			
Sub-total (a)				

B. Income from domestic animals and fisheries

Sl. No.	Sources of income	Total production (kg)	Values per unit (Taka)	Total value (Taka)
1.	Livestock			
2.	Poultry			
3.	Fisheries			
4.	Others (if any)			
Sub-total (b)				

C. Income from non-agricultural sources

Sl. No	Sources of income	Total value (Taka)
1.	Service	
2.	Business	
3.	Day labour	
4.	Others (if any)	
Sub-Total (c)		

Total income = (a+b+c) = Tk.

6. Organizational participation

Please mention your nature & extent of participation in the following organizations

Sl. No.	Name of organizations	Not involved	Nature and extent of participation		
			Ordinary member (years)	Executive committee member (years)	Officer of the executive committee (president/ secretary) years
1.	Farmer's co-operative samithy				
2.	Adult education committee				
3.	Mosque/Mandir committee				
4.	Landless committee				
5.	Union parisad				
6.	School/College/ Madrasha committee				
7.	Youth club				
8.	Bazar committee				
9.	NGO'S organization				
10.	Others				

7. Cosmopolitaness

Please indicate the nature of your visit to the following places within a specific period

Sl. No.	Places of visit	Extent of visit			
		Frequently	Occasionally	Rarely	Not at all
1.	Other villages	10 or more times/month	5-9 times/month	1-4 times/month	0
2.	Other Union	4 or more times/month	2-3 times/month	1 time/month	0
3.	Upazila sadar	10 or more times/year	5-9 times/year	1-4 times/year	0
4.	Other upazila sadar	8 or more times/year	4-7 times/year	1-3 times/year	0
5.	Own district	6 or more times/year	3-5 times/year	1-2 times/year	0
6.	Other district	3 or more times/year	2 times/year	1 time/year	0
7.	Capital city	3 times/life	2 times/life	1 time/life	0

8. Agricultural knowledge

Please answer the following questions

Sl. No.	Questions	Scores	
		Total Scores	Obtained scores
1.	Mention two modern Boro rice variety	2	
2.	Mention two characteristics of good seed	2	
3.	Mention two steps of rice seed preservation	2	
4.	Mention two reasons of rice seed quality decline	2	
5.	Mention two distinguish characteristics between HYV and local variety rice	2	
6.	Mention two problems of local variety	2	
7.	Name two chemical fertilizers that are available in market	2	
8.	Name two green manuring crops	2	
9.	Mention the name of two organic manures	2	
10.	Mention two disadvantages of excess use of urea fertilizer in Boro field	2	
11.	Mention two differences between chemical fertilizer and organic fertilizer	2	
12.	Mention two identifying characteristics of urea fertilizer deficiency in Boro field	2	
13.	Mention two process of improving soil fertility	2	
14.	Mention one harmful insect of Boro rice & its remedy	2	
15.	Mention one major disease of Boro rice & its remedy	2	
16.	Name two weeds of Boro rice	2	
17.	Mention tow disadvantages of crop-weed competition	2	

18.	Mention two control measures of weed in rice field	2	
19.	How many techniques of IPM do you apply?	2	
20.	What are the nature of damages of rice stem borer and rice hispa?	2	
21.	Mention two disadvantages of excess use of insecticides in the field	2	
22.	Mention two sources of irrigation water	2	
23.	Mention two importance of irrigation in Boro rice cultivation	2	
24.	What is the critical stage of irrigation application in Boro rice cultivation?	2	
25.	Mention two modern agricultural implements	2	
Total		50	

9. Use of information sources by the resources-poor farmers

- a) Please mention your extent of contact with the following information sources in receiving the selected information on cultivation of HYV Boro rice

Information on	Information sources																
	Individual							Group			Mass						
	UAO / AEO	SAAO	Local leader	NGO'S worker	Input dealer	Exp. farmer	Neighbors	Relatives	Group discussion	R. demon. meeting	Agril. training	Daily newspaper	Radio	Television	Poster	Leaflet	Agricultural fair
HYV seed																	
Seed preservation																	
Balance fertilizer doses																	
Plant protection measures																	
Irrigation																	

b. Please indicate your extent of use of the following information sources in receiving agricultural information (give tick mark)

Sl. No.	Sources of information	Extent of using the information sources			
		Always use	Occasionally use	Rarely use	Not at all
Individual	UAO / AEO	≥ 3 times/year	2 times/year	1 time/year	0
	SAAO	≥ 6 times/year	4-5 times/year	1-3 times/year	0
	Local leader	≥ 5 times/month	3-4 times/month	1-2 times/month	0
	NGO's workers	≥ 5 times/month	3-4 times/month	1-2 times/month	0
	Input dealers	≥ 5 times /3 months	3-4 times/ 3 months	1-2 times/ 3 months	0
	Experienced farmers	≥ 5 times/month	3-4 times/month	1-2 times/month	0
	Neighbors	≥ 5 times/week	3-4 times/week	1-2 times/week	0
	Relatives	≥ 4 times/week	2-3 times/week	1 time/week	0
Group	Group discussion	≥ 5 times/6 month	3-4 times / 6 months	1-2 times/ 6 months	0
	Result demonstration meeting	≥ 1 time/year	1 time/2 years	1 time/3 years	0
	Agricultural training	≥ 4 times/life	2-3 times/life	1 time / life	0
Mass	Daily newspaper	≥ 5 times/week	3-4 times/week	1-2 times/week	0
	Radio	≥ 5 times/week	3-4 times/week	1-2 times/week	0
	Television	≥ 5 times/month	3-4 times/month	1-2 times/month	0
	Poster	≥ 5 times/year	3-4 times/year	1-2 times/year	0
	Leaflet	≥ 5 times/year	3-4 times/year	1-2 times/year	0
	Agriculture fair	≥ 1 time/year	1 time/2 years	1 time/ ≥ 3 years	0

10. Please indicate your problem that you usually face in receiving agricultural information from various sources

Sl. No.	Problems	Extent of problem				
		Very High	High	Medium	Low	Very Low
1	Unavailability of agricultural training					
2	Inadequate farm and home visit by extension personnel					
3	Inadequate number of demonstration plot					
4	Inadequate agricultural information in radio and television					
5	Extension personnel give more attention towards a few big and progressive farmers					
6	Dispersion of information from farmers to farmers may be distorted					
7	Innovation do not reach at the moment to farmers					
8	Input cost may be increased due to communicate with different sources at distance places and it is also time consuming					
9	Effect of government information sources is not satisfactory					
10	Inadequate information on electricity supply, input availability and disease forecasting					

11. Please give suggestions to overcome the above mentioned Problems

- i.
- ii.
- iii.
- iv.
- v.

Thank you for your kind co-operation

(Md. Shahadat Hussain)

.....
Name with Signature of the Interviewer

Date

APPENDIX B

কৃষি সম্প্রসারণ ও ইনফরমেশন সিস্টেম বিভাগ
শেরেবাংলা কৃষি বিশ্ববিদ্যালয়
শেরেবাংলানগর, ঢাকা-১২০৭

“উচ্চফলশীল জাতের বোরো ধান চাষে তথ্যের উৎস সমূহের ব্যবহার সম্পর্কিত ক্ষুদ্র
কৃষকদের মতামত সংগ্রহের সাক্ষাৎকার অনুসূচী”

[সাক্ষাৎকার অনুসূচীর মাধ্যমে সংগ্রহীত তথ্যের গোপনীয়তা রক্ষা করা হবে এবং এগুলো শুধুমাত্র একাডেমিক
উদ্দেশ্য ব্যবহার করা হবে]

উত্তরদাতার নাম : ক্রমিক নং

পিতার নাম : তারিখ :

গ্রাম :

ইউনিয়ন :

উপজেলা :

জেলা :

[অনুগ্রহ করে নিম্নোক্ত তথ্যগুলো দিন]

১. বয়স

আপনার বর্তমান বয়স কত ?

..... বছর মাস ।

২. শিক্ষা

আপনার শিক্ষাগত যোগ্যতা উল্লেখ করুন

(ক) লেখাপড়া জানি না

(খ) শুধু দস্তখত করতে জানি

(গ) আমি শ্রেণী পাশ করেছি

৩. খামার অভিজ্ঞতা

বোরো মৌসুমে উচ্চফলশীল জাতের ধান চাষে আপনার অভিজ্ঞতা কত সময়ের ?

..... বছর ।

৪. খামারের আয়তন

ব্যবহার অনুযায়ী আপনার জমির বিবরণ দিন

ক্রঃ নং	জমির ধরণ	জমির পরিমাণ	
		স্থানীয় এককে	হেক্টর
ক.	বসত বাড়ির জমি (বাগান/পুকুরসহ)		
খ.	নিজ জমি নিজ চাষে		
গ.	বর্গা নেওয়া (½ সুবিধা ভোগে) জমি		
ঘ.	বর্গা দেওয়া (½ সুবিধা ভোগে) জমি		
ঙ.	বন্ধক নেওয়া জমি		
মোট = ক+খ+½(গ+ঘ) + ঙ			

৫. বাৎসরিক আয়

অনুগ্রহ করে নিম্নোক্ত উৎসগুলো থেকে আপনার বাৎসরিক আয়ের বিবরণ দিন

ক. জমির ফসল থেকে আয়

ক্রঃ নং	ফসল	উৎপাদন (কেজি)	ইউনিট প্রতি মূল্য (টাকা)	মোট মূল্য
১.	আউশ			
২.	আমন			
৩.	বোরো			
৪.	গম			
৫.	ভুট্টা			
৬.	পাট			
৭.	ডাল শস্য			
৮.	তেল শস্য			
৯.	মসল্লা			
১০.	শাক সবজি			
১১.	আখ			
১২.	ফল			
১৩.	অন্যান্য (উল্লেখ করুন)			
	উপ-সমষ্টি (ক)			

খ. গৃহপালিত পশুপাখি এবং মৎস্য চাষ থেকে আয়

ক্রঃ নং	ফসল	উৎপাদন (কেজি)	ইউনিট প্রতি মূল্য (টাকা)	মোট মূল্য
১.	পালিত গরু বাছুর			
২.	হাঁস-মুরগী			
৩.	মাছ			
৪.	অন্যান্য (যদি থাকে)			
	উপ-সমষ্টি (খ)			

গ. কৃষিবিহীন উৎস থেকে আয়

ক্রঃ নং	আয়ের উৎস	মোট মূল্য (টাকা)
১.	চাকুরি	
২.	ব্যবসা	
৩.	শ্রমিক	
৪.	অন্যান্য (যদি থাকে)	
উপ-সমষ্টি (গ)		

মোট আয় = ক+খ+গ = টাকা

৬. সংস্থার সাথে জড়িতকরণ

নিম্নোক্ত প্রতিষ্ঠানের সাথে আপনার জড়িত থাকার ধরণ ও ব্যাপ্তি উল্লেখ করুন

ক্রঃ নং	প্রতিষ্ঠানের নাম	জড়িত নাই	জড়িত থাকার ধরণ ও ব্যাপ্তি		
			সাধারণ সভ্য (বছর)	কার্য নির্বাহী কমিটির সভ্য (বছর)	কার্যনির্বাহী কমিটির কর্মকর্তা সভাপতি/সাঃ সম্পাদক (বছর)
১.	কৃষক সমবায় সমিতি				
২.	বয়স্ক শিক্ষা কমিটি				
৩.	মসজিদ/মন্দির কমিটি				
৪.	ভূমিহীন কমিটি				
৫.	ইউনিয়ন পরিষদ				
৬.	স্কুল/কলেজ/মাদ্রাসা কমিটি				
৭.	যুব ক্লাব				
৮.	বাজার কমিটি				
৯.	এন,জি, ও গ্রুপ				
১০.	অন্যান্য				

৭. তথ্য সংগ্রহের জন্য বিভিন্ন স্থানে যাতায়াত

নিম্নোক্ত স্থানে একটি নির্দিষ্ট সময়ে আপনার যাতায়াতের ধরণ উল্লেখ করুন

ক্রঃ নং	যাতায়াতের স্থান	যাতায়াতের ধরণ			
		প্রায়ই	মাঝে মধ্যে	কদাচিৎ	মোটাই না
১.	অন্য গ্রাম	১০ বার বা বেশী/মাস	৫-৯ বার/মাস	১-৪ বার/মাস	০
২.	অন্য ইউনিয়ন	৪ বার বা বেশী/মাস	২-৩ বার/মাস	১ বার/মাস	০
৩.	উপজেলা সদর	১০ বার বা বেশী/বছর	৫-৯ বার/বছর	১-৪ বার/বছর	০
৪.	অন্য উপজেলা সদর	৮ বার বা বেশী/বছর	৪-৭ বার/বছর	১-৩ বার/বছর	০
৫.	নিজ জেলা	৬ বার বা বেশী/বছর	৩-৫ বার/বছর	১-২ বার/বছর	০
৬.	অন্য জেলা	৩ বার বা বেশী/বছর	২ বার/বছর	১ বার / বছর	০
৭.	রাজধানী শহর	৩ বার বা বেশী/ জীবদ্দশায়	২ বার/জীবদ্দশায়	১ বার/জীবদ্দশায়	০

৮. কৃষি বিষয়ক জ্ঞান

অনুগ্রহ করে নিম্নোক্ত প্রশ্নগুলোর উত্তর দিন

ক্রঃ নং	প্রশ্ন	নম্বর	
		পূর্ণ নম্বর	প্রাপ্ত নম্বর
১.	বোরো ধানের ২টি উন্নত জাতের নাম বলুন	২	
২.	ভাল বীজের ২টি বৈশিষ্ট্য বলুন	২	
৩.	বীজ সংরক্ষণের ২টি ধাপ বলুন	২	
৪.	ধান বীজ অবক্ষয়ের ২টি কারণ উল্লেখ করুন	২	
৫.	উচ্চ ফলনশীল জাত ও স্থানীয় জাতের মধ্যে ২টি পার্থক্য বলুন	২	
৬.	স্থানীয় জাতের ধান চাষে ২টি সমস্যা উল্লেখ করুন	২	
৭.	বাজারে পাওয়া যায় এমন ২টি রাসায়নিক সারের নাম বলুন	২	
৮.	২টি সবুজ সার জাতীয় ফসলের নাম বলুন	২	
৯.	২টি জৈব সারের নাম বলুন	২	
১০.	বোরো ধানের ক্ষেতে অতিরিক্ত ইউরিয়া ব্যবহারের ২টি অপকারীতা উল্লেখ করুন	২	
১১.	রাসায়নিক সার ও জৈব সারের মধ্যে ২টি পার্থক্য বলুন	২	
১২.	বোরো ক্ষেতে ইউরিয়ার অভাবজনিত ২টি লক্ষণ উল্লেখ করুন	২	
১৩.	মাটির উর্বরতা বৃদ্ধির ২টি পদ্ধতি বলুন	২	

১৪.	বোরো ধানের ১টি ক্ষতিকর পোকাকার নাম ও প্রতিকার বলুন	২	
১৫.	বোরো ধানের ১টি মারাত্মক রোগের নাম ও প্রতিকার বলুন	২	
১৬.	বোরো ধানের ২টি আগাছার নাম বলুন	২	
১৭.	শস্য আগাছা প্রতিযোগিতার ২টি অপকারীতা বলুন	২	
১৮.	ধান ক্ষেতে আগাছা প্রতিরোধের ২টি ব্যবস্থা উল্লেখ করুন	২	
১৯.	আপনি সমন্বিত বালাই ব্যবস্থাপনার কয়টি পস্থা অবলম্বন করেন	২	
২০.	মাজরা পোকা ও পামরী পোকাকার ক্ষতির ধরন বলুন	২	
২১.	ক্ষেত্রে অতিরিক্ত কীটনাশক ব্যবহারের অপকারীতা বলুন	২	
২২.	সেচের পানির ২টি উৎস বলুন	২	
২৩.	বোরো ধানে সেচের ২টি গুরুত্ব বলুন	২	
২৪.	বোরো ধানে সেচ প্রয়োগের সংকট মুহূর্ত বলুন	২	
২৫.	২টি আধুনিক কৃষি যন্ত্রের নাম বলুন	২	
মোট		৫০	

৯. উচ্চফলনশীল জাতের বোরো ধান উৎপাদনে ব্যবহৃত তথ্যের উৎস সমূহ

ক) উচ্চফলনশীল জাতের বোরো ধান চাষ সম্পর্কিত নির্ধারিত তথ্য পেতে নিম্নোক্ত কোন

উৎসগুলোর সাথে আপনার যোগাযোগ রয়েছে তা উল্লেখ করুন

তথ্যের বিষয়	তথ্যের উৎস																
	একক							দলীয়			গণ						
	উপজেলা কৃষি কর্মকর্তা / কৃষি সম্প্রসারণ কর্মকর্তা	উপ-সহকারী কৃষি কর্মকর্তা	স্থানীয় নেতা	এম জি ও কর্মী	ইনপুট ডিলার	অভিজ্ঞ চাষী	প্রতিবেশী	আত্মীয়	দলীয় আশোচনা	ফটোফল প্রদর্শন সভা	কৃষি প্রশিক্ষণ	দৈনিক সংবাদপত্র	রেডিও	টেলিভিশন	পোস্টার	ফিশলেট	কৃষি মেলা
উন্নত জাতের বীজ																	
বীজ সংরক্ষণ																	
সুসম সারের মাত্রা																	
গাছ সংরক্ষণ ব্যবস্থা																	
সেচ																	

খ. কৃষি বিষয়ক তথ্য গ্রহণে তথ্যের উৎস সমূহের ব্যবহারের মাত্রা নিরূপন (টিক চিহ্ন দিন)

তথ্য মাধ্যম	তথ্য উৎসের নাম	তথ্যের উৎস ব্যবহারের মাত্রা			
		নিয়মিত	মাঝে মাঝে	কদাচিৎ	কখনো না
একক	উপজেলা কৃষি কর্মকর্তা/ কৃষি সম্প্রসারণ কর্মকর্তা	≥ ৩ বার/বছর	২ বার/বছর	১ বার/বছর	০
	উপ-সহকারী কৃষি কর্মকর্তা	≥ ৬ বার/বছর	৪-৫ বার/বছর	১-৩ বার/বছর	০
	স্থানীয় নেতা	≥ ৫ বার/মাস	৩-৪ বার/মাস	১-২ বার/মাস	০
	এন জি ও কর্মী	≥ ৫ বার/মাস	৩-৪ বার/মাস	১-২ বার/মাস	০
	ইনপুট ডিলার	≥ ৫ বার/৩মাস	৩-৪ বার/৩মাস	১-২ বার/৩মাস	০
	অভিজ্ঞ চাষী	≥ ৫ বার/মাস	৩-৪ বার/মাস	১-২ বার/মাস	০
	প্রতিবেশী	≥ ৫ বার/সপ্তাহ	৩-৪ বার/সপ্তাহ	১-২ বার/সপ্তাহ	০
	আত্মীয়	≥ ৪ বার/সপ্তাহ	২-৩ বার/সপ্তাহ	১-২ বার/সপ্তাহ	০
দলীয়	দলীয় আলোচনা	≥ ৫ বার/৬ মাস	৩-৪ বার/৬ মাস	১-২ বার/৬ মাস	০
	ফলাফল প্রদর্শন সভা	১টি / বছর	১টি /২ বছর	১টি / ৩ বছর	০
	কৃষি প্রশিক্ষণ	≥ ৪ বার/জীবদ্দশায়	২-৩/জীবদ্দশায়	১বার / জীবদ্দশায়	০
গণ	দৈনিক সংবাদপত্র	≥ ৫টি/ সপ্তাহ	৩-৪ টি/সপ্তাহ	১-২টি/সপ্তাহ	০
	রেডিও	≥ ৫ বার/ সপ্তাহ	৩-৪ বার/সপ্তাহ	১-২ বার/সপ্তাহ	০
	টেলিভিশন	≥ ৫ বার/মাস	৩-৪ বার/মাস	১-২ বার/মাস	০
	পোস্টার	≥ ৫টি / বছর	৩-৪টি/বছর	১-২টি / বছর	০
	লিফলেট	≥ ৫টি / বছর	৩-৪টি/বছর	১-২টি/বছর	০
	কৃষি মেলা	≥ ১ বার / বছর	১ বার/২ বছর	১ বার/≥৩ বছর	০

১০. বিভিন্ন উৎস থেকে কৃষি বিষয়ক তথ্য গ্রহণে আপনি যে ধরনের সমস্যার সম্মুখীন হয়েছেন তা উল্লেখ করুন

ক্রঃ নং	সমস্যা	সমস্যার ব্যাপ্তি ধরণ				
		খুব বেশী	বেশী	মধ্যম	কম	খুব কম
১	অপর্যাপ্ত কৃষি প্রশিক্ষণ					
২	সম্প্রসারণ কর্মীদের খামার ও বাড়ী পরিদর্শন পর্যাপ্ত নয়					
৩	রেডিও এবং টিভিতে কৃষি বিষয়ক অনুষ্ঠান কম					
৪	প্রদর্শনী পুটের সংখ্যা কম					
৫	কিছু সংখ্যক বড় ও উন্নত কৃষকের প্রতি সম্প্রসারণ কর্মীদের মনোযোগ বেশী					
৬	কৃষক থেকে কৃষক তথ্য বিনিময়ে তথ্যের বিকৃতি ঘটে					
৭	উন্নত কলাকৌশল সময়মত কৃষকের কাছে পৌছায় না					
৮	দূরবর্তী স্থানের উৎস থেকে তথ্য নিতে ইনপুট খরচ বেড়ে যায় এবং এটি সময় সাপেক্ষ ব্যাপারও					
৯	সরকারী উৎসগুলো থেকে প্রাপ্ত তথ্যের কার্যকারীতা কম					
১০	বিদ্যুৎ সরবরাহ, উপকরণ প্রাপ্তি স্থান এবং আবহাওয়া পূর্বাভাস সম্পর্কে তথ্য কম					

১১. উপরোক্ত সমস্যাগুলো সমাধানকল্পে আপনার পরামর্শ থাকলে বলুন

ক.

খ.

গ.

ঘ.

ঙ.

সার্বিক সহযোগিতার জন্য আপনাকে ধন্যবাদ।

(মোঃ শাহাদাত হোসেন)

তারিখ :

সাক্ষাৎকার গ্রহণকারীর নামসহ স্বাক্ষর

APPENDIX C

Correlation matrix showing interrelationship among all the variables

	X ₁	X ₂	X ₃	X ₄	X ₅	X ₆	X ₇	X ₈	X ₉
X ₁	1								
X ₂	-0.148	1							
X ₃	0.688**	-0.010	1						
X ₄	0.386**	0.264**	0.577**	1					
X ₅	0.404**	0.360**	0.567**	0.904**	1				
X ₆	0.057	0.435**	0.151	0.249*	0.325**	1			
X ₇	0.263**	0.283**	0.399**	0.585**	0.574**	0.290**	1		
X ₈	0.514**	0.245*	0.601**	0.717**	0.662**	0.160	0.444**	1	
X ₉	0.022	0.494**	0.252*	0.507**	0.606**	0.390**	0.376**	0.353**	1

* Correlation is significant at 0.05 level of Probability

** Correlation is significant at 0.01 level of Probability

X₁ = Age

X₂ = Education

X₃ = Farming experience

X₄ = Farm size

X₅ = Annual income

X₆ = Organizational participation

X₇ = Cosmopolitaness

X₈ = Agricultural knowledge

X₉ = Use of information sources