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**USE OF MASS MEDIA BY THE FARMERS IN ADOPTION OF RICE PRODUCTION TECHNOLOGIES IN BERA UPAZILA OF PABNA DISTRICT**

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**ABSTRACT**

Islam MR, Kundu S, Ruma NN (2017) Use of mass media by the farmers in adoption of rice production technologies in Bera Upazila of Pabna district. *J. Innov. Dev. Strategy*. 11(2), 1-5.

The purpose of the study was to determine the extent of use of mass media in adoption of rice production technologies and to explore the relationships between the selected characteristics of the farmers and their use of mass media. Bera upazila under Pabna district was purposively selected for this study. Among nine union of the Bera upazila, Haturia Nakalia union was selected purposively for this study. Four villages were purposively selected for this study. Out of 806 farmers of these selected villages 121 farmers were selected as the sample by using proportionate random sampling method. Data were collected by the authors by using interview schedule during 10 April, 2014 to 11 May, 2014. Use of mass media by the farmers was determined by using five points rating scale. Pearson's product moment coefficient of correlation (r) was computed to explore the relationships between the selected characteristics of the farmers and their use of mass media. The result revealed that 42.1% of the respondents were very low user compared to 40.5% respondents were low user while 17.4% were under medium user category of mass media in adoption of rice production technology. Findings revealed that among ten characteristics age, education, farm size, annual family income, organizational participation, innovativeness and agricultural knowledge of the farmers had positive significant relationship with their use of mass media while family size, family assets and attitude towards modern agricultural technologies had no significant relationship with their use of mass media.

**Key words:** farmers, rice, production technology, mass media, adoption

**INTRODUCTION**

Rice is the staple food for 160 million people of Bangladesh. More than 95% of population consumes rice and it alone provides 76% of calorie and 66% of total protein requirement of daily food intake (Bhuiyan *et al.* 2002). In fact agriculture sector is largely dominated by rice production. In Bangladesh, rice is grown in three main seasons, namely Boro (January to June), Aus (April to August) and Aman (August to December) covering almost 11.42 million hectares of land and total production was 33.83 million metric ton (BBS 2013).

Agricultural production can be increased if appropriate technologies are used by the farmers who are the primary unit of adoption of improved practices. Different research organizations namely BRRI, BINA, BAU, SAU, IRRI and private organizations develop various rice production technologies like IPM, drum seeder, granular urea, direct seedling and nursery seedling. Diffusion of proper knowledge on those modern technologies among the rural people demands effective communication. In addition, immediate and effective means of communication are also important dimensions for dissemination of technologies. This suggests that the flow of information should be as fast as possible and should also be understandable, well interpreted, accepted and liked by the users. But most of the farmers have not yet adopted improved rice production technologies even technologies are available. One may logically assume that message of rice production technologies has not yet been properly conveyed to the farmers. It may also happen the technologies which are being developed that do not reach to the ultimate users effectively for their application (Halim and Miah, 1996). The Department of Agricultural Extension (DAE) and some other government and non-Government Organizations are working at the field level in transferring information from a research system (technology generation unit) through an extension system (interpreter and dissemination of technology) to the client system (technology user unit) (Kashem and Halim, 1991). Technology should be made available to the people through right media within the quickest possible time. Extension agents follow a number of extension methods such as result and method demonstrations, farm publications (leaflets, booklets bulletins and poster), agricultural radio and television programs, contact with farmers' local and opinion leader, field tour and field days etc. All communication media may not be appropriate to serve the people. The mass media channels can be used for accelerating dissemination of information for various aspects of agricultural and rural development. Mass media channels and other means of transmitting message involves television, radio, newspaper, leaflet, booklet, poster and agricultural fair.

In most of the cases, the effectiveness of extension educational programmes depends, to a greater extent, on the proper selection and use of the communication media. Mass media shows better result to create awareness and increase level of knowledge, attitude and practices (Adhikarya 1994). Many national program and projects were undertaken for agricultural development from the 1950s, which had very limited success in the transfer of technology. In order to expedite the process of technology transfer the donor agencies now give more emphasis on mass contact media (Amur 1994; Adhikarya 1994) which can develop a considerable acquaintance with ultimate users very rapidly. Thus mass media brings about changes in the behavioural patterns of the farmers, about rice production technologies. Considering the above issues the present study was undertaken with the following specific objectives for immediate benefit of farmers and food security:

1. to determine the extent of use of mass media in adoption of rice production technologies,

2. to determine and describe the selected characteristics of the farmers, such as: age, education, family size, farm size, annual family income, family assets, organizational participation, innovativeness, attitude towards agricultural technologies and agricultural knowledge, and
3. to explore the relationship between the selected characteristics of the farmers and their use of mass media in adoption of rice production technologies.

## **METHODOLOGY**

Haturia Nakalia union of Bera upazilla under Pabna district was selected purposively as the study area. Four villages namely Jogonnathpur, Nayanpur, Pachakola and Maldahpara were purposively selected from this union. A list of all the farm families of the selected villages was prepared with the help of Agricultural Extension Officer (AEO) of Bera upazilla and Sub-Assistant Agriculture Officer (SAAO) of Haturia Nakalia union. The total number of farmers in those villages were 806 who constituted the population of this study. Fifteen percent (15%) of the farmers were selected from that village by using proportionate random sampling. Thus, one hundred and twenty one (121) farmers were selected which constituted the sample for this study. However, a reserve list of 17 farmers was also prepared. Farmers in the reserve list were used only when a respondent in the original list was not available. Data were collected by using pre-tested interview schedule during 10 April, 2014 to 11 May, 2014. Analysis was performed using statistical treatments, such as number, frequency count, percentage, range, mean and standard deviation. In order to find out the relationships between selected characteristics of the farmers and their use of mass media, Pearson's product-moment correlation co-efficient (r) was used.

### **Variables and its measurement**

#### **Use of mass media**

Use of mass media by the farmers was the main focus of the study. Use of mass media score of respondent was computed on the basis of the extent of his/her use of mass media. Four technologies; HYV of rice, IPM, gutee urea, and drum seeder and five mass media; radio, television, newspaper, poster and agricultural fair were selected for this study. For each technology respondents were asked to indicate his extent of use of particular (5) mass media along a five point rating scale: regularly, often, occasionally, rarely and never. A score of 4 was given for regularly, 3 for often, 2 for occasionally, 1 for rarely and 0 for never. The same method was followed for the rest of three technologies. Mass media use score of a respondent was determined by summing the scores obtained by the respondent for 4 technologies. Use of mass media score of respondents could range from 0 to 80, where, 0 indicating no use of mass media, 80 for high use of mass media.

#### **Selected characteristics of the farmers**

Personal and socioeconomic characteristics of the farmers were considered as independent variables. They are age, education, family size, farm size, annual family income, family assets, organizational participation, innovativeness, attitude towards agricultural technology and agricultural knowledge. Age of a respondent was measured in terms of actual years from his/her birth to the time of interview. Education was measured in terms of grades of education completed by an individual from his educational institutions; where, 1 was assigned for successful completion of each year of education from an educational institution and 0.5 was assigned for sign only and 0 was assigned for no education at all. Whereas family size of a respondent was determined in terms of actual number of members in his/her family including himself/herself. On the other hand, annual family income of a respondent was measured on the basis of the total yearly earning from agricultural and non-agriculture sector earned by the respondent himself/herself and other family members. Family asset of the respondents was measured by the market value of respondents' total assets. Organizational participation of a respondent was measured by computing an organizational participation score according to his/her nature and duration of participation in nine (9) selected different organizations up to the time of interview. Innovativeness of the respondent was measured on the basis of five point rating scale of their adoption of 13 new technologies related to farming. Score was assigned on the basis of earliness in use of a practice by a respondent. Five point scale was used to determine the attitudes towards technology. This variable contained ten statements out of which 6 statements were positive and 4 statements were negative. The respondents were asked to express their opinion in the form of strongly agree, agree, no opinion, disagree and strongly disagree. Scores of 4, 3, 2, 1 and 0 were assigned, respectively in case of strongly agree, agree, no opinion, disagree and strongly disagree for a positive statement. On the other hand, for a negative statement reverse scoring method was followed. Agricultural knowledge of a respondent in the study was measured by score asking him fifteen different questions related to crop varieties, name of seasonal crops, agricultural programs etc. The total assigned score of all the questions was 30.

## **RESULTS AND DISCUSSION**

### **Extent of use of mass media in adoption of rice production technologies**

The observed range of use of mass media in adoption of rice production technologies was 6 to 35 against the possible range 0 to 80 with a mean of 17.89 and standard deviation of 7.15. Based on the use of mass media scores the respondents were classified into three group which is shown in Table 1. Data presented in Table 1

show that the 42.1% of the respondents belong to very low user category while 40.5% were under low user and 17.4% were under medium user category of use of mass media in adoption of rice production technologies.

Table 1. Distribution of the farmers according to their use of mass media

| Category (Scores)        | Farmers |         | Mean  | SD   |
|--------------------------|---------|---------|-------|------|
|                          | Number  | Percent |       |      |
| Very low user (up to 15) | 51      | 42.1    | 17.89 | 7.15 |
| Low user (16-25)         | 49      | 40.5    |       |      |
| Medium user (above 25)   | 21      | 17.4    |       |      |
| Total                    | 121     | 100     |       |      |

Data reveal that around 83% respondents belonged to very low user to low user category of use of mass media in adoption of rice production technologies. Adoption depends on the use of mass media. By using mass media people came to know about the technology. But in the study area mass media usage was not up to the mark. People seem to be not aware about the importance of mass media in receiving information. It was observed that most of the respondents had television in the study area but they had less interest to watch agricultural programs rather other entertainment programs. Radio was not used very much in the study area. Nowadays the importance of radio has been particularized in some pocket area as community radio. The broadcasting time for agricultural program on radio or television was not in convenient time for most of the farmers in the study area.

### Selected characteristics of the farmers

In this section, the findings on the farmers' selected characteristics have been discussed and salient features is presented in table 2, which indicates majority (79.3%) of the respondents belonged to young and middle aged categories, around 30% had primary level of education and on an average, farm family consisted of 7 family members and more than half (52.1%) respondent belonged to medium family size category. Almost all of the respondents (98.3%) belonged to small to medium farm size categories and it may be due to not belongingness of young people to land ownership. However, overwhelming majority (91.7%) of the farmers possessed low to medium family assets and had low to medium annual income. Only 3.3% of the farmers had no organizational participation and the highest proportion had very low to low organizational participation. Overwhelming majority (89.3%) of the respondents belongs to low to medium innovativeness categories. Table 2 also reveals that majority of the farmers belonged to moderate favourable attitude and medium knowledge categories.

Table 2. Salient features of the sample farmers selected characteristics

| Sl. no. | Characteristics (measuring unit)                          | Range |           | Respondents                        |     |      | Mean  | SD    |
|---------|---|-------|-----------|------------------------------------|-----|------|-------|-------|
|         |   | Pos.  | Obs.      | Categories                         | No. | %    |       |       |
| 1.      | Age (Actual years)  | -     | 23-65     | Young (up to 35)                   | 45  | 37.2 | 40.61 | 10.69 |
|         |   |       |           | Middle aged (36-50)                | 51  | 42.1 |       |       |
|         |   |       |           | Old (above 50)                     | 25  | 20.7 |       |       |
| 2.      | Education (Year of Schooling)                             | -     | 0-10      | No education (0)                   | 38  | 31.4 | 2.74  | 3.13  |
|         |   |       |           | Can sign only (0.5)                | 25  | 20.7 |       |       |
|         |   |       |           | Primary education (1-5)            | 36  | 29.7 |       |       |
|         |   |       |           | Secondary education (6-10)         | 22  | 18.2 |       |       |
|         |   |       |           | Higher education (above 10)        | 0   | 0    |       |       |
| 3.      | Family size (Numbers)                                     | -     | 3-15      | Small family (up to 4)             | 11  | 9.1  | 7.36  | 2.54  |
|         |   |       |           | Medium family (5-7)                | 63  | 52.1 |       |       |
|         |   |       |           | Large family (above 7)             | 47  | 38.8 |       |       |
| 4.      | Farm size (Hectares)                                      | -     | 0.18-3.59 | Small farm (0.18-1.0)              | 91  | 75.2 | 0.82  | 0.64  |
|         |   |       |           | Medium farm (1.1 – 3.0)            | 28  | 23.1 |       |       |
|         |   |       |           | Large farm (above 3.0)             | 2   | 1.7  |       |       |
| 5.      | Annual income ('000'tk)                                   | -     | 39-278    | Low income (up to 75)              | 61  | 50.4 | 85.24 | 38.29 |
|         |   |       |           | Medium income (76-150)             | 50  | 41.3 |       |       |
|         |   |       |           | High income (above 150)            | 10  | 8.3  |       |       |
| 6.      | Family assets ('000'tk)                                   | -     | 12-645    | Low (up to 51)                     | 46  | 38.0 | 63.18 | 57.49 |
|         |   |       |           | Medium (52-79)                     | 65  | 53.7 |       |       |
|         |   |       |           | High (above 79)                    | 10  | 8.3  |       |       |
| 7.      | Organizational participation (Score)                      | 0-270 | 0-18      | No participation (0)               | 4   | 3.3  | 7.35  | 3.58  |
|         |   |       |           | Very low participation (1-6)       | 50  | 41.3 |       |       |
|         |   |       |           | Low participation (7-12)           | 59  | 48.8 |       |       |
|         |   |       |           | Medium participation (above 12)    | 8   | 6.6  |       |       |
| 8.      | Innovativeness (Score)                                    | 0-52  | 8-26      | Very low innovativeness (up to 14) | 13  | 10.7 | 18.60 | 3.38  |
|         |   |       |           | Low innovativeness (15-20)         | 74  | 61.2 |       |       |
|         |   |       |           | Medium innovativeness (above 20)   | 34  | 28.1 |       |       |
| 9.      | Attitude towards modern agricultural technologies (Score) | 0-40  | 5-36      | Slightly favorable (up to 15)      | 23  | 19   | 24.16 | 8.01  |
|         |   |       |           | Moderately favorable (16-30)       | 79  | 65.3 |       |       |
|         |   |       |           | Highly favorable (above 30)        | 19  | 15.7 |       |       |
| 10.     | Agricultural knowledge (Score)                            | 0-30  | 11-25     | Medium knowledge (up to 20)        | 95  | 78.5 | 18.38 | 2.86  |
|         |   |       |           | High knowledge (above 20)          | 26  | 21.5 |       |       |

It was also observed that half of the respondents in the study area were not able to receive primary education because of their lower annual income, they can't even afford their basic needs. For that reason newspaper and poster were not beneficial to them. Moreover most of the farmers in the study area belong to low annual income category. They were unable to afford newspaper with their income. Agricultural fair may be beneficial to them but they were indifferent about the importance of it. It is very much understandable that mass media can increase the rate of adoption by disseminating innovation properly. But the use of mass media in the study area was not up to the expected level. Extension agent should come forward to overcome the above situation by making people motivate about the importance of mass media in disseminating information.

### **Relationships between selected characteristics of the farmers and their use of mass media in adoption of rice production technologies**

An attempt was made to determine the relationships between the selected characteristics of the respondents with their use of mass media in adoption of rice production technologies. The result reveals that out of ten selected characteristics of the farmers seven namely age, education, farm size, annual family income, organizational participation, innovativeness and agricultural knowledge had positive significant relationship with their use of mass media at one percent level of significance. Possible reason could be education enables individuals to gain knowledge and thus increase their power of understanding, consequently their outlook is broadened and horizon of knowledge is expanded. The educated person used to have frequent contact with mass media which increase their power of understanding compared to the individuals with less educational background. However, organizational participation, innovativeness and agricultural knowledge help farmers to orient themselves in mass media which will increase their understanding and might facilitate themselves more use of mass media in adoption of rice production technologies. Fariduzzaman (2010), Islam (2005) and Nuruzzaman (2003) also found similar results in their studies. On the other hand larger farm size and higher annual family income facilitate farmers to take more risk and they became more rational to use mass media in adoption of production technologies. Hossain (2009) and Fariduzzaman (2010) also found similar results in their studies. Whereas attitude towards technology and family asset of the farmers had positive non-significant relationship with their use of mass media.

Table 3. Co-efficient of correlation (r) between farmers selected characteristics and their use of mass media (N=121)

|                   | Selected characteristics of the farmers | Values of "r" with 119 df. | Table value of "r" |            |
|-------------------|---|----------------------------|--------------------|------------|
|                   |   |                            | 0.05 level         | 0.01 level |
| Use of mass media | Age                                     | 0.193*                     | 0.179              | 0.237      |
|                   | Education                               | 0.682**                    |                    |            |
|                   | Family size                             | -0.068NS                   |                    |            |
|                   | Farm size                               | 0.428**                    |                    |            |
|                   | Annual family income                    | 0.402**                    |                    |            |
|                   | Family asset                            | 0.089 NS                   |                    |            |
|                   | Organizational participation            | 0.247**                    |                    |            |
|                   | Innovativeness                          | 0.427**                    |                    |            |
|                   | Attitude towards technology             | 0.175 NS                   |                    |            |
|                   | Agricultural knowledge                  | 0.517**                    |                    |            |

NS Not significant, \* Significant at 0.05 level of probability and \*\* Significant at 0.01 level of probability

### **CONCLUSION**

The study indicated that majority of the respondents comprised of either young or middle-aged categories. It may therefore be concluded that extension teaching should be given to young and middle aged categories because they are more receptive in nature than the older. A respondent with more education was found to be more aware to solve his/her problem more efficiently and financial hardships of the respondents allow them to use mass media (both electronic and printed media). Moreover higher organizational participation and more innovativeness increase knowledge and create favorable attitude towards mass media use, s/he would adopt new rice production technologies and thus attain food security and improve livelihoods.

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