

Effect of Information Media as Perceived by the Farmers in Cultivation of Hybrid Rice in Bangladesh

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Abstract—The present study reveals that majority of the farmers (65 percent) indicated low effect of information media in receiving information on hybrid rice cultivation while only 6 percent indicated high effect of media. Individual contact media such as neighbors, friends, relatives, progressive farmers/ model farmers, and Sub Assistant Agricultural Officer (SAAO) had been commonly used by the farmers whereas, television, radio and newspaper were used at a considerable extent as mass contact media in receiving information on hybrid rice cultivation. The statistical analysis showed significant positive relationship of education, farm size, annual income, cosmopolitaness, extension contact, training experience, innovativeness, agricultural knowledge of the farmers with the effect of information media. On the other hand, age and farming experience of the farmers had significant but negative relationship with the effect of information media. This means that the more age and farming experience of the farmers the less use of their information media might be concluded that younger people are efficient users of communication media. However family size and organizational participation of the farmers had no significant relationship with their effect of information media in receiving information on hybrid rice cultivation.

Keywords: Information media, hybrid rice, farmer, effect

1. INTRODUCTION

Rice is the staple food of the people of Bangladesh. Considering its land area, Bangladesh is an over populated country with very low land per capita. So, to fulfill the expanded demand of food of the people, the requirement of rice is high. To meet this massive challenge, it is necessary to develop rice varieties with higher yield potential. Development and introduction of hybrid rice varieties is a breakthrough for rice production. Hybrid rice takes advantage of the phenomenon of hybrid vigour known as heterocyst to achieve yields 15-20% higher than non-hybrid (inbred) varieties. Although hybrid rice has been introduced in Bangladesh since 2002, and despite the policymakers is emphasizing its popularization, the diffusion of the rice

still is not near optimistic level. It might be due to the reason that Most of the farmers are not practically informed of improved practices of hybrid rice cultivation due to lack of proper information. If farmers maintain proper contact with different information media they can make themselves available of the opportunity to collect information at the right time. Communication or knowledge is essential for improving the productivity of the farmers. This is why, the farmers, more specifically the commercial farmers are very much motivated to accept new technology through different information media.

Proper use of information media is vital for receiving technological know-how and there is very little number of studies on effect of information media as perceived on hybrid rice cultivation. Van den Ban and Hawkins (1988) reported that in industrialized countries people spend more time with television and radio than printed word. Radio is most important mass medium for farmers of less industrialized countries now also spend considerable time watching television. In context of Bangladesh it is evident that highest proportion of the farmers (35 percent) used interpersonal contact media where as almost equal proportion (32 percent) of them had individual contacts in the adoption of modern rice technologies and this was followed by mass contact method (Kashem and Halim, 1991). Another report claimed more than 75% resource poor farmers in Bangladesh try to use various information Sources for receiving agricultural information (Khan, 1996), but the appropriate message and source of the same is not always up to the desired level of the farmers. However, the purpose of the present study is to ascertain the effect of different information media as perceived by the farmers in receiving information on hybrid rice cultivation. Thus the research work was conducted with the following objectives:

1. To determine and describe the effect of information media as perceived by the farmers in receiving information on hybrid rice cultivation.
2. To determine and describe the selected individual characteristics of the farmers.
3. To explore the relationship between the individual characteristics of the farmers and their effect of information media as perceived in receiving information on hybrid rice cultivation.

2. MATERIALS AND METHODS

2.1 Study area

The study was conducted in Zakigonj upazila of Sylhet district. Zakigonj upazila with an area of 287.33 sq km is bounded by Meghalaya (India) and Kanaighat upazila on the north, Assam state of India on the south and east, Beanibazar upazila on the west. The upazila consists of one municipality, 9 union parishads, 119 mouzas and 286 villages. Main rivers are Kushiya, Surma, Talgang and Birasreegang; *Jalmahal* 70, Balai and Mailaterhaors are notable. The reason behind the selection was the fact that these were intensively hybrid rice cultivation areas in Zakigonj upazila and thereby considered the suitable area for the study.

2.2 Population and sample of the study

The researcher himself with the help of the Sub Assistant Agriculture Officer (SAAO) prepared an updated list of all the hybrid rice growers of the selected villages. The total numbers of hybrid rice growers in these villages were 217, which constituted the population of the study. Forty six percent (46%) of the hybrid rice growers from the population were selected by using a table of random number. Thus the sample size constituted 100 hybrid rice growers. A reserve list of 30 farmers was also prepared. Farmers in the reserve list were used only when a respondent in the original list was not available.

2.3 Data Collection

Primary and secondary data were used to elicit information necessary for the study. The primary data were collected using pre-tested interview schedule prepared based on FGD in the study area and Secondary data were obtained from literatures, journal, annual reviews, internet etc. The researcher himself collected data from the sampled farmers by using the personal interview schedule during November 2014.

2.4 Variables of the Study

In the present study, the respondents' selected characteristics viz. age, education, family size, farm size, annual income, organizational participation, cosmopolitaness, extension contact, farming experience, training experience,

innovativeness and agricultural knowledge were considered as independent variables whereas Effect of information media as perceived by the farmers in cultivation of hybrid rice constituted the dependent variable.

2.5 Analytical Tools

The SPSS (Statistical Package for Social Sciences) computer package was used to perform data analysis. Descriptive analysis such as mean, range, number and percentage, standard deviation and rank order were used whenever necessary. The extent of use of information media score was computed for each respondent on the basis of the extent of his use with 8 selected media and a four point rating scale ranging from no use =0, Rarely use =1, Occasionally use =2 and Frequently use=3 was developed for this purpose. A five point rating scale and weights were used to determine the effect of each communication medium as: No effect of media=0, Low effect of media=1, Medium effect of media=2, High effect of media=3 and Very high effect of media=4. Pearson's Product Moment Correlation Coefficient (r) was computed to explore the relationships between the dependent and independent variables.

3. RESULTS AND DISCUSSIONS

3.1 Socio-economic characteristics of the respondents

The data presented in the table indicates the majority of the beneficiaries were active middle aged with primary to secondary education level. An overwhelming majority (89 percent) of them had medium family as well as farm household with 0.409 to 2.32 ha of lands. The vast majority (83 percent) of the respondents had medium high to high annual family income and the sources of income of the respondents were farming, selling of labours, agricultural products, fishing, poultry, trees, services, business and other sources. The farmers with more organizational participation scores are expected to use more information media in receiving information on hybrid rice cultivation but 66 percent had low participation, 6 percent had medium, and only 1 percent high organizational participation was evident in the study area. Majority of the respondents were found to have low contact (78 percent) with extension personnel and low information media exposure (73 percent). Three-fourth of them had medium experience (62 percent) in farming activities and only 12 percent farmers got training in various extent with 88 percent none. However, the respondents in the study area were found as innovative in respect of various agricultural technologies although they have medium agricultural knowledge.

Table 1: Socioeconomic Characteristics of the farmers

Socio-economic characters	Frequency	Percent	Socio-economic factor	Frequency	Percent
Age (years)			Mean	2.43	
Young (18-30)	22	22.0	Standard Deviation	11.879	
Middle age (31-61)	63	63.0	Organizational Participation (score)		
Old (above 61)	15	15.0	No participation (0)	27	27
Mean	44.63		Low (1-45.33)	66	66.0
Standard Deviation	11.609		Medium (45.34-90.66)	6	6.0
Education &(score)			High (90.67-136)	1	1.0
No education (0)	20	20.0	Mean	15.0	
Primary (1-3)	65	65.0	Standard Deviation	20.16	
Secondary and above(4-5)	15	15.0	Extension Contact (score)		
Mean	6.0		Low contact (up to 7)	78	78.0
Standard Deviation	3.67		Medium contact (8-14)	15	15.0
Family size (members)			High contact (above 15)	7	7.0
Small (2 to 3)	4	4.0	Mean	12.43	
Medium (4 to 13)	89	89.0	Standard Deviation	7.137	
Large(14 and above)	7	7.0	Farming Experience (years)		
Mean	8.0		Short experience (2 – 30)	15	15.0
Standard Deviation	4.526		Medium experience (31 – 59)	62	62.0
Farm Size (ha)			Long experience (60 – 85)	23	23.0
Marginal (0 to 0.09ha)	2	2.0	Mean	26.15	
Small (0.1 to .408ha)	5	5.0	Standard Deviation	12.149	
Medium (.409 to 2.32ha)	79	79.0	Innovativeness (score)		
Large (> 2.33 ha)	14	14.0	Low (9-11.542)	8	8.0
Mean	1.36		Medium (11.543-18.45)	84	84.0
Standard Deviation	0.956		High (above 18.456)	8	8.0
Annual Income ('000)			Mean	15.0	
Low (41-50.76)	6	6.0	Standard Deviation	3.458	
Medium (50.77-222.97)	83	83.0	Cosmopoliteness (score)		
High (222.98-255)	11	11.0	Low cosmopoliteness (upto 10)	10	10.0
Mean	136.87		Medium cosmopoliteness (11-20)	77	77.0
Standard Deviation	86.101		High cosmopoliteness (above 21)	13	13.0
Training Experience (score)			Mean	15.03	
No training (0)	88	88.0	Standard Deviation	4.241	
Very few (1-15)	5	5.0	Agricultural knowledge (score)		
Low training (16-30)	3	3.0	Low (5-7.907)	10	10.0
Medium training (31-45)	2	2.0	Medium (7.908-15.833)	75	75.0
High training(46-60)	1	1.0	High (15.834-27)	15	15.0
Very high(above 60)	1	1.0	Mean	11.87	
			Standard Deviation	3.963	

3.1 Extent of information media use

The table 2 indicates the majority (73 percent) of the farmers had low degree compared to 16 percent of them having medium degree, 7 percent high and 4 percent no degree category. Thus, an overwhelming majority (89 percent) of the respondents had low to medium degree. This might be due to the reason that road transportation and communication network in Bangladesh has not considerably been developed.

Rural communication system has not also been improved much which unable the rural people to maintain close contact with upazila, district headquarters and other places. Extent of use of information media might have favorable effect on information media of recommended technology. Visits to different locations may improve knowledge of the farmers and subsequently they may use this information in their farms.

Table 2: Distribution of farmers depending on their extent of use of information media

Categories	Farmers		Mean	Standard Deviation
	Frequency	Percent		
No use(0 score)	4	4.0	5.34	5.65
Low use(1-8.33 scores)	73	73.0		
Medium use(8.34-16.66 scores)	16	16.0		
High use(above 16.67 scores)	7	7.0		

3.2 Effect of information media as perceived by the farmers

Majority (65 percent) of the farmers indicated low effect and 24 percent indicated no effect while only 6 percent of them indicated high effect of information media on hybrid rice cultivation. Besides that 5 percent of the population belongs to medium effect. So it could be concluded that most of the respondents of the study area far from the information sources about modern hybrid rice cultivation. The poor exposure to various sources of information is likely to be the root cause of inadequate knowledge.

Table 3: Distribution of farmers depending on their Effect of information media

Categories	Farmers		Mean	Standard Deviation
	Frequency	Percent		
No effect (0 scores)	24	24.0	3.73	6.31
Low effect (1- 10 scores)	65	65.0		
Medium effect (11-20 scores)	5	5.0		
High effect (above 21 scores)	6	6.0		

Table 4 presents the effect of some selected information media perceived by the farmers in receiving agricultural information and highly used information media by the farmers were television and radio programs on agriculture, while occasionally used information media were newspaper and magazine where as lower used information media were mobile phone, poster, and advertisement. No effected by leaflet/ booklet was evident in the study. A close look into data presented in table 4 reveals the fact that out of two 'highly used' information media television was highly effective technology on hybrid rice cultivation. Farmers became enabling to get information through television, it also played a major source of information, these two had vital roles as source of information. In last two to three years, there had been substantial level mass media campaign in favor of hybrid rice and it was learnt that farmers came to know many

information about hybrid rice from frequently broadcast television and radio programs.

Table 4: Effect of some selected information media perceived by the farmers

Sl. No	Information media	Effect of information media (N =100)				
		Very high	high	medium	low	No
1.	Television program on agricultural	19	6	8	44	25
2	Radio program on agricultural	3	1	4	7	85
3.	Mobile phone	4	0	3	7	86
4.	Poster	5	2	5	8	80
5.	Newspaper	9	3	3	6	79
6.	Internet	5	0	4	0	91
7.	Magazine	1	1	3	2	93
8.	Advertisement	1	1	2	3	93
9.	Leaflet/ booklet	0	0	0	1	99

4. RELATIONSHIP BETWEEN THE SELECTED CHARACTERISTICS OF THE FARMERS AND THEIR EFFECT OF INFORMATION MEDIA

Co-efficient of correlation (r) was used to explore if there was statistically significant relationship between the selected characteristics and effect of communication technology in receiving information on hybrid rice cultivation by the farmers and strong positive correlation was evident of the selected characters like education (Alam, 2004), farm size (Sarkar,2005), annual income (Karim,2005), cosmopolitaness (Nuruzzaman, 2003),extension contact (Sarker,2002), training experience (Rayapareddy and Jayaramaiah,1989), innovativeness (Karim,2005), and agricultural knowledge (Anisuzzaman, 2003). Again, age and farming experience were negatively correlated with their effect of information media. Alam (2004) also got similar findings and concluded that with the increase of age, the media use tendency and dependency reduces. In addition to this, family size and organizational participation of the respondents did not show any relationship with their effect of information media which resembles to the finds of Saha, 2003 who observed it remains all the same with or without the change of those two factors.

Table 5: Relationship between farmers selected characteristics and the effect of information media

Characteristics of the farmers	Correlation of Co-efficient with effect of information media	Tabulated value significant at	
		0.05 level	0.01 level
Age	-0.339**		
Education	0.579(**)		
Family size	0.011		
Farm size	0.267**		
Annual income	0.407**		

Organizational participation	0.120	0.195	0.254
Cosmopolitaness	0.497**		
Extension contact	0.758**		
Extent of use of information media	0.926**		
Farming experience	-0.408**		
Training experience	0.218*		
Innovativeness	0.584**		
Agricultural knowledge	0.726**		

** Correlation is significant at 0.01 level of probability and* Correlation is significant at 0.05 level of probability

5. CONCLUSIONS AND RECOMMENDATIONS:

The findings indicate that majority of the farmers (65 percent) indicated low effect of information media in receiving information on hybrid rice cultivation, while only 6 percent indicated high effect of media. So the farmers need more exposure to information media to receive appropriate information about technology like hybrid rice. Individual contact media such as neighbours, friends, relatives, progressive farmers/ model farmers, and Sub Assistant Agricultural Officer (SAAO) had been commonly used by the farmers in receiving information of hybrid rice cultivation. In case of use of mass contact media, television, radio and newspaper were used at a considerable extent whereas, mobile phone, internet and magazine were used by a very poor extent. It is also concluded that use of information media, especially television is getting increasing popularity with the emergence of a number of television channels and a good coverage of hybrid rice in their agricultural programs. The statistical analysis showed significant positive relationship of education, farm size, annual income, cosmopolitaness, extension contact, training experience, innovativeness, agricultural knowledge of the farmers with the effect of information media, therefore, it may be concluded that these characteristics of the farmers play important role for using of information media in receiving information on hybrid rice cultivation. On the other hand, age and farming experience of the farmers had significant but negative relationship with the effect of information media. This means that the more age and farming experience of the farmers the less use of their information media might be concluded that younger people are efficient users of communication media. However family size and organizational participation of the farmers had no significant relationship with their effect of information media in receiving information on hybrid rice cultivation. Thus the following recommendations can be made based on the above findings:

- i. 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 program as well as can learn many technical aspects of modern agricultural technology.
- ii. Sub Assistant Agriculture Officers (SAAO), progressive farmers, model farmers and local information agents

should be trained up about hybrid rice production so that they can offer better advices to the fellow friends, relative and neighbors and any other farmers and can diffuse the innovations.

- iii. The department of Agricultural Extension (DAE) as well as concerned NGOs including private companies needs to pay more attention to ensure the use of information media to show clear difference between traditional and recommended practices and as such it creates more confidence among the farmers about new innovation.
- iv. Extensive training sessions and formal as well as non-formal education should be availed to enhance knowledge and skills in farm production and ways of getting information from the extension agents to be opened to the farmers through collaborative attempt of GOs and NGOs.

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