

Extent of Printed and Electronic Materials Use by the Literate Farmers in Receiving Agricultural Information in Bangladesh

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Abstract—This study was carried out to assess the Extent of Printed and Electronic Media Use in Receiving Agricultural Information by The Literate Farmers in Dhunat Upazila of Bogra District of Bangladesh. A random sampling technique was used for selecting samples. The total sample size was 100 respondents. Data were collected through a well structure interview schedule and analyzed with descriptive statistics and Chi-square. The study showed that the respondents have different degree of accessibility to Agricultural leaflet, Daily newspaper, Agricultural bulletin, Agricultural program on Television and Agricultural program on radio etc. Agricultural leaflet (265 score out of 300) was found to be more accessible and also the major source of agricultural technologies to the farmers. The study further revealed that 89% of the respondents affirms that mass media is effective in the dissemination of agricultural technologies while 11% saw mass media as less effective. The Chi-square analysis at 0.05% level of probability showed that the use of printed and electronic media was effective in the dissemination of agricultural technologies in the study area. The factors militating against the effective utilization of those media as source of agricultural technologies to the farmers in the study area were also identified to lack of publicity, not available in cropping season, costly, unwillingness about sources, source face is unknown to the farmers. To enhance the effectiveness of mass media in the dissemination of agricultural technologies for agricultural development in the study area there is need to strengthen the use of television and radio as electronic media and agricultural poster and leaflets in information dissemination to farmers, more competent presenters who are knowledgeable in agriculture to handle agricultural programs. Also such programs should be broadcasted in local languages as much as possible and efforts must be taken to guarantee that the airing times are suitable.

Keywords: Agricultural technologies, Literate farmers, Printed media, Electronic media, Analysis.

1. INTRODUCTION

Bangladesh is predominantly an agricultural country. The development of agriculture is mostly dependents on the use of modern technologies by the farmers. Agricultural production can be increased when provided technologies are used properly by the farmers. Information and communication are

essential ingredients needed for effective transfer of technologies that are designed to boost agricultural production. For farmers to benefit from such technologies, they must first have access to them and learn how to effectively utilize them in their farming systems and practices. This should be the function of agricultural extension agencies all over the world. In Bangladesh, The Department of Agricultural Extension makes use of different approaches, means and media in transferring improved agricultural technologies to the end users (farmers). Printed and electronic media in agricultural information dissemination generally, are useful in reaching a wide audience at a very fast rate. They are useful as sources of agricultural information to farmers and as well constitute methods of notifying farmers of new developments and emergencies. They could equally be important in stimulating farmers' interest in new ideas and practices (Ani *et. al.* 1997).

In developing countries, latest mass media (both printed and electronic) have made their place for backing up agricultural sector through extension activities (Qamar, 2006) and these media have the capacity to uplift the knowledge and having impact on behaviour (Nazari and Hassan, 2011). The potency of modern electronic technology can be exploited for infotainment of farming community (Guenther and Swan, 2011). However, the printed and electronic media involve one-way communication from information source to the receivers. They permit limited and delayed feedback, which of course is essential for effective communication (Muhammad, 2005). Mahmood and Sheikh (2005) stated that creation of awareness is the first step towards the adoption process (Suman, 2003; Yawsonet. *al.*, 2010).

Electronic & print media are playing very important role in creating awareness about new agricultural technologies among farmers and are spreading agricultural technologies to the farmers at a faster rate than personal contacts. Khushk and Memon (2004) stated that production and distribution of printed material helps farmers in the transfer of new

information and technologies. Printing helps in preserving the technologies in the shape of books/booklets, magazines, newspapers and brochures. Farm publications have proved to be effective means for dissemination of information, especially to introduce new technologies. Farm publications are also useful for disseminating information among literate farmers (Singh, 2001).

Agricultural extension/information delivery is precisely a process of communication of improved skills, practices, innovations, technologies and knowledge to farmers. Thus, agricultural extension is a service which helps or assists people, particularly farm families through educational procedures in promoting their farming practices and techniques, increasing their production efficiency and income, bettering their levels of living and lifting their social, economic and educational standards of rural life (Ogunbameru, 2001). Food and Agricultural Organization (FAO 2001) reported that in many developing countries, wide adoption of research results by majority of farmers remains quite limited. This therefore, calls for a system which allows adequate information flow from researchers to farmers and vice-versa. Hence, Agricultural extension agencies have central role in facilitating the flow of a variety of information to offer the needed exposure of farmer to innovation for overall development. The present study was conducted with a major objective of assessing the use of printed and electronic media in receiving information of agricultural technologies by the literate farmers so that the outcome of the study will help the extension agents and various stakeholders to strengthen and having better use of mass media for agricultural information dissemination and for the development of farmers. Thus the specific objectives of the study were to:

- i. To describe the selected socio-economic characteristics of the literate farmers using printed and electronic materials in the study area.
- ii. To identify the printed and electronic materials and their extent of use by the literate farmers in receiving agricultural information.
- iii. To examine the effectiveness of **printed and electronic** materials in getting agricultural information to the farmers.
- iv. To find out the Factors militating against effective utilization of printed and electronic materials in getting information.
- v. To explore the relationship between the use of printed and electronic materials by the literate farmers and their selected characteristics.

1.1 Hypothesis of the study:

The hypothesis of the study stated in the null form is as follows:

“There is no relationship between the use of printed and electronic materials by the literate farmers in receiving agricultural information and their selected socio-economic characteristics”.

2. MATERIALS AND METHODS

2.1 Study area

The study was conducted in DhunatUpazila of Bogra district. Bogra district is largest district of Rajshahi division. It is located beside *Karatoyar* river. And research area of Dhunatupazila is situated near *Bangali* river that is sub-river of *Jamunar* river. Land of most of the union of Dhunatupazila are flat land and soil are fertile that suitable for agricultural crop. The physical, social and cultural heritage of the people of this area was similar in many cases

2.2 Population and Sampling Design

All the printed and electronic materials users of 9 Number Mathurapur union of Dhunatupazila constituted the population for this study. For this purpose an up to date list of the printed and electronic material user literate farmers were prepared with the help of the village elites and Sub Assistant Agriculture Officers (SAAO's) of this union. The total number of the printed and electronic material user literate farmers in those six villages was 340. About 33 percent of the literate farmers were selected as samples following simple random sampling method. Thus sample size stood 112. Among sample 112 literate farmers 12 were taken as reserve list. So the actual sample size stood 100. In all 100 literate farmers were selected as sample for the present study.

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 and Secondary data were obtained from literatures, examples include textbooks, journal, annual reviews, internet, electronic libraries and past students' thesis. Data were collected personally by the researcher himself from the respondents by using interview schedule during 15th February to 15th March, 2016. Excellent co-operation was obtained from the field extension workers and the local leaders.

2.4 Variables of the Study

In this study eleven selected characteristics of the literate farmers constituted the independent variables these are: age, level of education, farm size, family size, annual income, training exposure, extension media exposure, organizational participation, innovativeness, cosmopolitaness and agricultural knowledge and, use of printed and electronic materials by the literate farmers in receiving information was the dependent variable.

2.5 Analytical Tools

The analysis was performed using SPSS (Statistical package for social science) computer package. Descriptive analysis such as range, frequency count, number and percentage, mean, standard deviation and rank order were used, Chi-Square (χ^2) value was used in order to explore the relationship between the concerned variables. Throughout the study, five percent (0.05) level of probability was used as a basis of rejecting a null hypothesis. In order to determine difference between the respondents from two study locales regarding dependent and independent variables, student t-test for the difference of means was used.

3. RESULTS AND DISCUSSIONS

3.1 Socio-economic characteristics of the respondents

The table 1 revealed that two-thirds (67%) of the respondents fell in middle age category compared to (18%) being young and (15%) in old age category. The mean age was 43 years. This indicates that most of the respondents were adults and fall within economically active age group. Such group is most likely active in farming and tends to develop more interest in sourcing for agricultural technology through the mass media. In term of educational level, 61% and 12% had secondary and tertiary education while 20% respondents had primary education. Farmers' education generally has been found to enhance production among food crop farmers, apparently resulting from their efficiency in using new production technologies (Ani, 2006). Methods of using these new production technologies are demonstrated through the use of mass media. More educated farmers are typically assumed to be better able to process information and search for appropriate technologies to alleviate their production constraints. The majority (63%) of the literate farmers had medium family of (5–7) members while, (15%) had large family with the members above 7 members and (22%) of the respondents were belongs to small family consist of 1-4 members. Comparatively medium family means more workforces were to work in the crop field of the respondents. The data indicate that average family size (5.85). The findings demonstrate that the majority (57%) of the literate farmers was medium farm holders while only (2%) were landless farmers and (8%) were marginal, 16% were small and 17% farmers were large. Farmers having large farm size are usually tend to receive latest information regarding crop production. The majority (70%) of the literate farmers had medium income

101-250 thousand followed by (17%) low annual income and (13%) high annual income group. An overwhelming majority (70%) of the literate farmers belonged to medium income group. The gross annual income of a farmer is an important indicator of how much he can invest in his farming and curious to new information. Naturally, the person who has more income can invest more in the farming and as a result he may know about different aspect of farming and new technologies. Training experience is an important factor, which enhances demand of knowledge on various aspects of agricultural technologies and creates a positive attitude about the use of printed and electronic materials in receiving Agricultural information and the majority (68 percent) of the literate farmers (68%) had Medium training while the proportion of the literate farmers having less and highly training were 12 percent, 10 percent respectively. The finding reveals that many 68 percent of respondents had medium organizational participation while 14 percent had low and 18 percent boro farmers had high organizational participation. According to Yahaya and Omokhaye (2001), the social involvement of farmers through their participation in farmers' co-operatives will enhance diffusion of information and mobilization of new production practices among the farmers. Almost 75 percent of the literate farmers had medium extension media exposure while 13 percent of them had high extension media exposure. Besides that 12 percent of the population belongs to low extension media exposure. The distribution of literate farmers based on their extension media exposure scores is shown in table that majority of farmers had high to medium extension media exposure farmers. High level of extension media exposure also involve with high level of printed and electronic material used. Analysis of the data reveals that majority (75%) of the respondent had moderate innovativeness, (12%) had low innovativeness and (13%) were high innovativeness This indicates that there was appreciable innovativeness among the farmers. Visiting to different locations may improve knowledge of the literate farmers and subsequently they may use the new information and knowledge in their farms and 82 percent literate farmers had medium to high cosmopolitaness that may also play role in adoption of information in their farms (Hossain, 1999). Analysis of the data reveals that majority (64 percent) of the respondents had medium agricultural knowledge, 19 percent having high and only 17 percent had low agricultural knowledge which indicates that the literate farmers are not very far from the updated production practices.

Table 1: Socio-economic characteristics of respondents

Socio-economic factor	Number	%	Socio-economic factor	Nos	%
Age (years)			Agricultural Knowledge (score)		
			Low (up to 14.09)	17	17
			Medium (14.09 to 20.88)	64	64
Young aged (up to 35)	18	18	High (above 20.88)	19	19
Middle aged (36 to 60)	67	67	Mean	17.49	

Old aged (> 60)	15	15	Standard Deviation	3.39487	
Mean	42.67		Organizational Participation (score)		
Standard Deviation	8.90472		Low (up to 12.80)	14	14
Education (score)			Medium (12.81 to 20.91)	68	68
Primary (upto 5)	20	20	High (above 20.91)	18	18
Secondary (6-10)	61	61	Mean	16.86	
Higher secondary (11-12)	12	12	Standard Deviation	4.05771	
Above higher secondary (>12)	7	7	Extension Contact (score)		
Mean	8.26		Low (up to 18)	12	12
Standard Deviation	2.87314		Medium (29-26)	75	75
Family size (members)			High (>26)	13	13
Small (1-4)	22	22	Mean	22.29	
Medium (5-7)	63	63	Standard Deviation	4.15676	
Large (above 7)	15	15	Innovativeness (score)		
Mean	5.85		Low innovator (up to 17.28)	12	12
Standard Deviation	1.64762		Moderately Innovator (17.28 to 26.67)	75	75
Farm size (ha)			Highly innovator (>26.67)	13	13
Landless (Below 0.21 ha)	2	2	Mean	21.98	
Marginal (0.21-.40 ha)	8	8	Standard Deviation	4.69468	
Small (0.41-.99 ha)	16	16	Training Experience (score up to 6)		
Medium (1-2.41 ha)	57	57	Less trained (below 1.22)	22	22
Large (Above 2.41 ha)	17	17	Medium trained(1.23 to 4.11)	68	68
Mean	1.67		Highly trained (above 4.11).	10	10
Standard Deviation	0.97802		Mean	2.67	
Annual Income (score 1 for one thousand taka)			Standard Deviation	1.44289	
Low (up to 100)	17	17	Cosmopolitaness (score)		
Medium (101-250)	70	70	Low (upto 14.12)	18	18
High (above 250)	13	13	Medium (14.12 to 21.03)	71	71
Mean	175.50		High (above 21.03)	11	11
Standard Deviation	77.44664		Mean	17.58	
			Standard Deviation	3.45294	

3.2 Use of printed and electronic materials by the farmers

The major source of agricultural innovation to the respondents through the printed and electronic media was Agricultural leaflet (Table 2). This accounted for 265 score out of 300 and rank order 1, Daily newspaper (204 score) rank order 2 and Agricultural bulletin (195) rank order 3 given by the respondents. This result agrees with the findings of Haque (1972). The table also showed that many of the respondents got their agricultural innovation through Television (score 170, rank order 4). This also agrees with Nwachukwu and Odoemelam (2004) who expressed that television viewing in developing countries is growing rapidly and has great scope for timely research and action. The another important source of agricultural innovation to the respondents through the electronic media was radio(score 154, rank order 5). Hanif (1992) and Ali (1994) also found that radio was one of the major source of information in educating farmers regarding recommended agricultural practices. Also, Munyua (2000); and Craig (2001) found that rural radio was successful in delivering agricultural information to a target groups. Ani and Baba (2009) claimed that radio cuts across the literacy barriers required in books, newspapers, journals, bulletins, pamphlets etc. Radio in essence often does not require higher educational qualification or back-ground to be effective.

Table 2: Rank order of using printed and electronic materials by the farmers

Sl. NO.	Printed and electronic materials	Use index	Rank order	Sl. NO.	Printed and electronic materials	Use index	Rank order
1	Agricultural leaflet	265	1*	9	SRDI magazine	98	8
2	Agricultural bulletin	195	3	10	Daily newspaper	204	2
3	Circular letter	76	10	11	Online agricultural bulletin	24	15
4	Folder	96	9	12	Online agricultural magazine	28	14
5	Booklet	56	11	13	E-agricultural service	15 *	16*
6	Agricultural poster	53	12	14	Mobile agricultural service	51	13
7	Krishikotha	124	6	15	Agricultural program on Television	170	4
8	Krishibiplop	109	7	16	Agricultural program on radio	154	5

There are some other printed and electronic media like Krishikothe, Krishibiplop, SRDI magazine, Folder, Circular letter, Mobile agricultural service etc which are also being used by the literate farmers to a little extent which is almost similar to the findings of Samanta (1986) and Latif (1974).

3.3 Effectiveness of printed and electronic media to the respondents

Effectiveness is the extent to which the respondents have benefited immensely from printed and electronic media in terms of agricultural technology. Effectiveness in this context of study is the ability of printed and electronic media in relating the agricultural innovations to farmers. Table 3 showed that 89% of the respondents claimed that printed and electronic media were effective at medium to high extent in the dissemination of agricultural information while only 11% affirmed that mass media was less effective. However, agricultural posters, leaflets and agricultural programs on television and radio were found more effective in the study area and that is shown in table 4. However, The findings agreed with that of Aniet. *al.* (1997) which stated that mass media (printed and electronic) methods in agricultural information dissemination generally, are useful in reaching a wide audience at a very fast rate. They are useful as sources of agricultural information to farmers and as well constitute methods of notifying farmers of new developments and emergencies. They could equally be important in stimulating farmers' interest in new ideas and practices (Aniet. *al.* 1997). Those media are important in providing information for enabling the rural community to make informed decision regarding their farming activities, especially in the rural areas of developing countries (Lwoga, 2010).

Table 3: Distribution of literate farmers depending on their effectiveness of printed and electronic materials

Category	Respondents		Mean	Standard deviation
	Number	Percent		
Low effectiveness (up to 21.96)	11	11	27.06	5.10658
Medium effectiveness (21.97-32.16)	75	75		
High effectiveness (above 32.16)	14	14		
Total	100	100		

3.4 Factors militating against effective utilization of mass media

Information contained in table 4 present data on factors that militate against effective utilization of printed and electronic media as sources of agricultural technologies in the study area. Lack of publicity, no availability of information in cropping season, Costly materials, Unwillingness about sources, Source face is unknown to the farmers, Low mentality to share printed and electronic materials, Electricity problem, High call or internet charge, Lack of sincerity among the extension agent, Low agricultural knowledge and Unable to reading correctly are factors the top 11 obstacles. Lack of publicity formed the core constraint in the study area with 56% while unable to reading correctly was less common problem as cited by least of number of respondents (8). Not available in cropping season, costly, unwillingness about source face is unknown to the literate farmers are some of major problem. The Chi square test of obstacle of the literate farmers in receiving information from printed and electronic materials on table 5 showed that the computed Chi-square (χ^2) value (40.831) was statistically significant at 0.05 level of probability. Far more farmers than expected under medium obstacle farmers category had high use of printed and electronic materials and vice-versa might have influence in obstacle negative and significant relationship. Based on above factor the null hypothesis was rejected and it was concluded that the use of printed and electronic materials varied significantly with the obstacle of literate farmers.

Table4: Rank order of printed and electronic materials of the basis of effectiveness

Sl. NO.	Printed and electronic materials	Use index	Rank order	Sl. NO.	Printed and electronic materials	Use index	Rank order
1	Agricultural leaflet	202	2	9	SRDI magazine	87	9
2	Agricultural bulletin	99	8	10	Daily newspaper	108	7
3	Circular letter	71	11	11	Online agricultural bulletin	26	5
4	Folder	84	10	12	Online agricultural magazine	29	4
5	Booklet	61	12	13	E-agricultural service	19	6
6	Agricultural poster	245	1	14	Mobile agricultural service	57	3
7	Krishikothe	131	5	15	Agricultural program on Television	161	3
8	Krishibiplop	111	6	16	Agricultural program on radio	159	4

Table 5: Rank orders of different problems according their citation mentioned by the literate farmers

SL No	Problems	No. of citation	Rank/order	SL No	Problems	No. of citation	Rank/order
1	Lack of publicity	56	1	7	Unable to reading correctly	8	11
2	Not available in cropping season	53	2	8	Low agricultural knowledge	9	10
3	Source face is unknown to the farmers	33	5	9	Lack of sincerity among the extension agent	15	9
4	Low mentality to share printed and electronic materials	18	6	10	Electricity problem	19	7
5	Costly	48	3	11	High call or internet charge	22	8
6	Unwillingness about sources	36	4				

3.5 Relationship between the individual characteristics of the respondents and their use of printed and electronic materials

The null hypothesis was tested to examine the relationship of eleven selected characteristics of the literate farmers with their uses, effectiveness, and extent of received agricultural information from printed and electronic materials.

The Table 6 indicates the statistics of those variables and shows the result that, Level of education (χ^2 value 35.391, $df = 6$), Farm size (χ^2 value = 36.002, $df = 8$), Annual income (χ^2 value = 41.376, $df = 4$), Organizational participation (χ^2 value = 22.371, $df = 4$), Extension contact (χ^2 value = 13.986, $df = 4$), Innovativeness (χ^2 value = 13.986, $df = 4$), Cosmopolitanness (χ^2 value = 38.055, $df = 4$) and Agricultural knowledge (χ^2 value = 18.233, $df = 4$) of the literate farmers had positive significant relationship with their use of printed and electronic materials in receiving agricultural information. Again age (χ^2 value = 15.334, $df = 4$), family size (χ^2 value = 5.227, $df = 4$) and training experience (χ^2 value = 32.941, $df = 4$) of the literate farmers had no positive significant relationship with their use of printed and electronic materials in receiving agricultural information.

Table 6: Obstacle of the literate farmers in receiving information from printed and electronic materials

Category	Use of electronic and printed materials			Total
	Low	Medium	High	
Low	7 (44) ^H	9 (56) ^L	0 (0) ^L	16(100)
Medium	4 (6) ^L	61 (91) ^H	2 (3) ^L	67(100)
High	0 (0) ^L	11 (65) ^L	6 (35) ^H	17(100)
Total	11	81	8	100

Table 7: Relationship between the selected characteristics of the respondents and their use of printed and electronic materials

Selected characters	Use of electronic and printed materials			Selected characters	Use of electronic and printed materials		
	Low	Medium	High		Low	Medium	High
Age				Training experience			
Young aged	6 (33) ^H	12 (67) ^L	0 (0) ^L	Low trained	9 (41) ^H	13 (59) ^L	0 (0) ^L
Middle aged	5 (7) ^L	57 (86) ^H	5 (7)	Medium trained	2 (3) ^L	61 (90) ^H	5 (7)
Old aged	0 (0) ^L	12 (80)	3 (20) ^H	High trained	0 (0) ^L	7 (70) ^L	3 (30)
Education				Organizational participation			
Primary	9 (45) ^L	11 (55) ^L	0 (0) ^L	Low	3 (21) ^H	10 (72) ^L	1 (7)
Secondary	2 (3) ^L	55 (90) ^H	4 (7)	Medium	8 (11)	59 (87) ^H	1 (2) ^L
Higher secondary	0 (0) ^L	10 (83)	2 (17) ^H	High	0 (0) ^L	12 (67)	6 (33) ^H
Above higher secondary	0 (0) ^L	5 (71)	2 (29) ^L	Extension contact			
Family size				Low	3 (25) ^H	9 (75)	0 (0) ^L
Small	2 (9)	16 (73) ^L	4 (18) ^H	Medium	8 (11)	63 (84) ^H	4 (5) ^L
Medium	8 (12) ^H	51 (82)	4 (6) ^L	High	0 (0)	9 (69) ^L	4 (31) ^H
Large	1 (7)	14 (93) ^H	0 (0) ^L	Innovativeness			
Farm size				Low	3 (25) ^H	9 (75)	0 (0) ^L
Landless	2 (100) ^H	0 (0) ^L	0 (0)	Medium	8 (11)	63 (84) ^H	4 (5) ^L
Marginal	4 (50) ^H	4 (50) ^L	0 (0) ^L	High	0 (0) ^L	9 (69) ^L	4 (31) ^H
Small	2 (12)	14 (88) ^H	0 (0) ^L	Cosmopolitanness			

Medium	3 (5) ^L	49 (86) ^H	5 (9)	Low	8 (44) ^H	10 (56) ^L	0 (0) ^L
Large	0 (0)	14 (82)	3 (18) ^H	Medium	3 (4) ^L	64 (90)	4 (6) ^L
Annual income				High	0 (0) ^L	7 (64) ^L	4 (36) ^H
Low	9 (53) ^H	7 (41) ^L	1 (6)	Agricultural knowledge			
Medium	2 (3) ^L	64 (91) ^H	4 (6) ^L	Low	5 (29) ^H	12 (71) ^L	0 (0) ^L
High	0 (0) ^L	10 (77)	3 (23) ^H	Medium	6 (9) ^L	55 (86) ^H	3 (5) ^L
				High	0 (0) ^L	14 (74) ^L	5 (26) ^H

4. CONCLUSIONS AND RECOMMENDATIONS

Based on the results of the study, it can be concluded that majority of the respondents possessed secondary education, had medium farm holders, medium income of 101-250 thousand, medium organizational participation, medium extension media exposure, moderate innovativeness and medium to high cosmopolitanism with positive significant relationship with their use of printed and electronic materials in receiving agricultural information. Besides, cost of the farmers were middle aged between 36-60 years, had medium family of 5-7 members and Medium training experience and which had no positive significant relationship with their use of printed and electronic materials in receiving agricultural information.

The study also concluded that Agricultural leaflet, Daily newspaper, Agricultural bulletin, Television and Radio were more available and accessible, hence serves as the major sources of agricultural innovation to the respondents. Generally, the use of printed and electronic media in the dissemination of agricultural technologies was found to be effective in the study area. On the other hand, some other printed and electronic media like Krishikotha, Krishibiplop, SRDI magazine, Folder, Circular letter, Mobile agricultural service etc. are also being used by the literate farmers to a little extent. Besides, Literate farmers are facing some obstacles and the severity of lack of publicity, no availability of information in cropping season, costly materials, unwillingness about sources, source face is unknown to the farmers, low mentality to share printed and electronic materials, electricity problem etc. were remarkable in the study area. However, to provide better access and improve the effectiveness of printed and electronic media in the dissemination of agricultural technologies for agricultural development in the study area, the following recommendations were made:

- i. Policy development is needed for dissemination of agricultural information through leaflet, newspaper, bulletins, poster and other printed and electronic materials.
- ii. The printed materials such as newspaper, poster and leaflet publication should give more coverage on agricultural information and it should be administered on regular basis instead of occasional basis.
- iii. Agricultural extension services and Ministry of Agriculture should strengthen the use of television and

radio in information dissemination to farmers in the study area. Also such programs should be broadcasted in local languages as much as possible and efforts must be taken to guarantee that the airing times are suitable.

- iv. Adequate announcement of the agricultural programme on the radio and television before the kick off of the programme will keep the farmers abreast and enable them to plan their time to listen to and watch such programme.
- v. Formation of radio rural farmers or listening group among the farmers should be encouraged.
- vi. Finally, the educational level of the study area should be increased and farmers should be encouraged so as to be able to get benefits from printed material.

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