

Research Article**Awareness of farmers about information and communication technology based Agricultural extension services in some selected areas of chittagong district**

Sohel Rana

Department of Agricultural Economics and Social Sciences
Chittagong Veterinary and Animal Sciences University, Khulshi, Chittagong-4225, Bangladesh

ARTICLE INFO*Article history :*

Received: 20/12/2016

Accepted: 09/04/2017

*Keywords :*Farmers, awareness, ICT
agricultural extension, Services** Corresponding Author :*

Phone: +88 01718 270997

E-mail: sohel_241@yahoo.com**ABSTRACT**

The study was carried out to determine the farmers' awareness of Information and Communication Technology (ICT) based agricultural extension services and to assess the adoption of ICT based agricultural extension services by the farmers. The research was conducted in Mirsharai upazila under Chittagong district. Data were collected randomly by using a structured questionnaire from a total of sixty farmers of the study areas. Moreover, Focus Group Discussions (FGD) were conducted to cross-check the research findings. Data were collected from February to April 2016. It was found that the awareness as well as adoption of ICT based agricultural extension services by the farmers was very poor. The respondents are introduced with a few ICT based agricultural extension services such as Farmer's Information and Advice Centre (FIAC), Agricultural Information and Communication Centre (AICC), krishi call centre and agricultural bangle website. About 16 percent respondent only use the ICT based sources to get services on agricultural productivity. Farmer's level of education and extension media contact has the positive and significant relationship with adoption of ICT based agricultural extension services.

To cite this paper : Sohel Rana. 2017. Awareness of farmers about information and communication technology based Agricultural extension services in some selected areas of chittagong district. *Bangladesh Journal of Veterinary and Animal Sciences*, 5 (1): 56-59

1. INTRODUCTION

The economy of Bangladesh depends chiefly on agriculture. The challenge of feeding the increasing population from the shrinking land and water resources is a great task. Many agencies are working to support the farmers to produce food materials and related products. A number of approaches are taken to provide farmers required information to support their farming operation. The agricultural system of Bangladesh has a long history of coping with the challenges. The system has experienced remarkable development over time. Inclusion of Information and Communication Technologies (ICT) enhanced the capacity of the system to face the challenges. Agricultural technologies generated by Agricultural Research Institutes are now being disseminated to the

farmers by the Agricultural Extension agencies. The use of ICT technologies for disseminating agricultural technologies has been proved to be useful for enhancement of agricultural production.

Agricultural extension services provide critical access to the knowledge, information and technology that farmers require to improve the productivity and thus improve the quality of their lives and livelihoods. It is hence crucial to provide farmers with the knowledge and information in a quality and timely way. Although some ground-breaking tools like the telecenters can serve as major catalysts for information, knowledge and development opportunities, the access for farmers in remote villages is restricted due to the lack of infrastructure (UN 2005).

The ratio of the farm families to the extension agent is 1000:1, which is really very less (NAEP 1996). Although the appointed Village Local Workers (VLWs) disseminate the information, they hardly accept any accountability. These two issues have created the urgency to help and guide the poor farmers properly. The cost factor in face-to-face information dissemination at the right time, and the difficulties in reaching the target audiences, has also created the urgency to introduce ICT. It is only by the introduction of ICT that information can also be upgraded at the least cost (Kashem et al., 2010). Many authors have advocated a focused approach in understanding the impact of ICT for rural development or the effects of ICT on the processes through which people were working (Gomez and Hunt 1999; Walsham and Sahay 2006).

Information and Communication Technology has becoming a potential extension tool for enhancing development process in general and agricultural development in particular. ICT has been found as an effective means of delivery of farm information to the farming community. It could enable extension service providers to gather, store, retrieve and disseminate a broad range of information needed by crop producers such as information on best practices, new technologies, better prices of inputs and outputs, better storage facilities, improved transformation links and weather etc. There are many initiatives taken by government and private sector as well. The initiatives of Agricultural Information Service (AIS) are bangla website development; establishment of Agricultural Information and Communication Centre (AICC), establishment of community radio, mobile based agricultural extension service, establishment of krishi call center, launching e-book, online farmer television (AIS, 2013). Soil Resource Development Institute was developed online fertilizer recommendation system. Keeping this issue under consideration the proposed research project was conducted to determine the farmers' awareness of ICT based agricultural extension services and adoption of these ICT based agricultural extension services.

2. METHODOLOGY

2.1. Location of the Study

The study was conducted in an upazila where ICT based agricultural extension services exposed. Mirshari upazila under Chittagong district was selected as a suitable area for this study. The villages namely sikarpur, gopalpur and purbadurgapur under Durgapur union were selected as the specific study location. The selection was made on the basis of suggestions made

by the Upazila Agriculture Officer (UAO) and local Sub-Assistant Agriculture Officer (SAAO).

2.2. Methods and Instruments of Data Collection:

Both qualitative and quantitative means of data collection procedures were used in the study. Although the major part of the data were collected through survey by using a pre-tested interview schedule (questionnaire), other necessary data and situational information were collected by conducting Focus Group Discussion (FGD) sessions.

In order to collect relevant data, a structured interview schedule was carefully prepared keeping the objectives of the study in mind. The questions and statements contained in the schedule were simple, direct and easily understandable by the respondents. The interview schedule contained both open and closed form of questions. Some scales were included in the schedule wherever necessary. The draft interview schedule was pre-tested among eight villagers in under durgapur union of Mirsharai upazila. The pre-test facilitated the researcher to identify faulty questions in the draft schedule and suitability of the scales. Necessary corrections and modifications were made on the basis of the pre-test results.

2.2. Data Collection

Data were collected from the 60 respondents in a number of ways. A focus group discussion (FGD) was conducted to have a preliminary understanding of the issues of the research. These FGD session was helpful to finalise the questionnaire (interview schedule) by collecting and confirming the items used in its different sections. Furthermore two FGD sessions were conducted to verify the findings of the questionnaire survey. The final data collection was conducted by using a structured interview schedule. Data were collected from the farmers through face-to-face interview. The data collection process started in February 2016 and continued up to April 2016.

2.3. Data Processing and Analysis:

The collected data were properly edited and coded before final instalment. The Statistical Package for Social Science (SPSS) was used for data analysis. Mainly descriptive statistics such as percentage, frequency, mean and standard deviation were used in interpretation.

3. RESULTS AND DISCUSSION

3.1. Major Characteristics of the Respondents

The salient features of the selected characteristics of the respondents have been presented in Table-1 without giving detailed classification of the respondents' characteristics, only the mean values and standard deviations were presented for understanding the centrality of the characteristics.

Table 1. Salient feature of the selected characteristics of the respondents

Variables	Unit	Minimum	Maximum	Mean	Standard deviation
Age	Years	25	82	50.68	11.98
Education	Year of schooling	3	12	7.58	2.38
Family size	Number	2	16	6.36	2.50
Farm size	Hectare	0.10	3.92	0.90	0.83
Annual household income	'000 Tk.	53.6	1374	225.34	243.76
Training exposure	Days	1	3	1.29	0.53
Extension media contact	Scale score	13	21	16.55	1.62

3.2. Farmer's awareness of ICT based agricultural extension services:

The major objective of the study was to have an understanding on adoption of ICT based agricultural extension services by the farmers. In this connection, at first farmers must aware of such ICT based agricultural extension services. It was found that farmers of the study area were aware of a few ICT based extension services such as FIAC, AICC, agriculture related bangle website and krishi call centre developed by AIS. But the awareness level was very poor. Only 10 percent respondent were known to FIAC, 12 percent farmers were aware about FIAC and AICC, only 1.7 percent respondents were aware about agriculture related website and only 1.7 percent respondents were aware about krishi call centre.

3.3. Extent of adoption of ICT based agricultural extension services:

It was found that the adoption of ICT based agricultural extension services were very low. About 16 percent respondent only use the ICT based sources to get service on agricultural productivity. There are lots of initiatives about ICT based agricultural extension services by the government and private sectors but the adoption by the ultimate users i.e. farmers is very low. They faced different problems regarding adoption of ICT based agricultural extension services-

- Lack of awareness about these ICT based easy services
- Lack of internet connectivity
- There education level is poor
- Less contact with professional agricultural extension workers
- Lack of motivation of extension workers etc.

Rahman and Islam (2015) observed that ICT tools have very much useful in the enhancement of agricultural extension services in Bangladesh. Some useful recommendations they made; use of smart phone for access to update information, ICT innovation development in the field of extension and adoption to the field, video conferencing for forecasting and quick technology dissemination, access to market information etc.

3.4. Relationship between selected characteristics and adoption of ICT based agricultural extension services

It was found that the respondents who have comparatively higher education level and higher extension media contact their adoption of ICT based agricultural extension services was more. Higher educational background and extension media contact of an individual inspires farmers to adopt ICT based agricultural extension services.

4. CONCLUSION

The farmers received their farm information from extension workers, input dealers, neighbors and friends mainly. Maximum of the respondents were not aware of ICT based agricultural extension services. Only 16 percent farmers were aware of some ICT base agricultural extension services such as FIAC, AICC, bangla website and krishi call centre. They faced different problems regarding adoption of ICT based agricultural extension services. The extension field practitioners often disseminate the technological message to the farmers either individually or in groups. However, through this approach messages very often fail to reach majority of the farmers who are spread across the country. Farmers need is much more diversified and the knowledge required to address them is beyond the capacity of the grass root level extension functionaries. In view of the advancement of the technology and importance of communication, its swiftness in 21st century, it is necessary to explore the use of ICT based agricultural extension services as the important means for accelerating dissemination of farm information among the farmers. Farmer's education level and extension media contact have positive and significant relationship with their adoption of ICT based agricultural extension services. It is not possible to analyse all aspects of adoption of ICT based agricultural extension services in a single research with limited time and resources. The following recommendations have been put forth for further research in this area:

- Similar studies should be undertaken in other region for specific information
- Similar studies may be undertaken on wider aspects of adoption related issues like cost, availability of ICT based services etc.
- Awareness of farmers should be increased about ICT based agricultural extension services.

ACKNOWLEDEMENT

The study was conducted with the financial support of University Grants Commission of Bangladesh through Directorate of Research and Extension, Chittagong Veterinary and Animal Sciences University.

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