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INFORMATION AND COMMUNICATION TECHNOLOGY (ICT) AS A SOURCE OF AGRICULTURAL INFORMATION IN WEST GARO HILLS DISTRICT, MEGHALYA

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Abstract: This paper is an attempt to understand the various sources of communication information accessed by the farmers of West Garo Hills District in the state of Meghalaya, India. It then identifies the potential constraints and concludes with some recommendations. In this regard, 120 farmers have been selected randomly to provide information about ICT use in agriculture in West Garo Hills district of Meghalaya. A pre-tested schedule was used to gather information by the personal interview method of sampling. Simple tables and percentages were used to analyze the data collected. The result showed that majority of the population preferred to seek information from mobile phones (72.50 per cent) followed by agriculture extension offices (71.67 per cent) and television (60.00 per cent). The major constraints encountered by the farmers in using ICT were found to be lack of awareness of information sources, poor network connectivity, power fluctuations and inadequate technical skills to operate ICT devices. Basic trainings on ICT, improvement in basic infrastructures like power supply and network connectivity are recommended.
Keywords: ICT (Information and Communication Technology), Communication, Farmers, Agricultural Productivity, Agricultural Technologies.

Introduction

Information and Communication Technology (ICT) is a set of tools and resources used to exchange information from one source to the other. Exchanging information is critical for the stakeholders in agriculture value chain in order to reduce the asymmetries in information and communication as well as to reduce the vicious circle of poverty (FAO, 2011). Adoption of information and communication in agriculture could improve the productivity, save the time, energy as well as money of people, groups and organizations (Bartlett, 2002). Shekara, (2001) in his article reported that information dissemination in agriculture through ICT was cost effective, time saving and the speed of communication was high. As discussed by Mittal, *et al*. (2010), the rapid growth of mobile telephony and introduction of mobile-enabled information services provide solution to bridge the information gap in agriculture which limit the agricultural productivity. The study found evidence that mobile phones are being used by the farmers to improve agricultural productivity. However, estimates indicated that 60.00 per

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cent of farmers do not access any source of information for advanced agricultural technologies resulting in huge adoption gap (NSSO, 2005). Thus, to improve the agricultural productivity and profitability for which the farmers have an ever increasing demand for information, it is important to study the various sources of communication information accessed by the farmers, their usage and the constraints associated in its use.

Methodology

The study was undertaken in West Garo Hills district of Meghalaya. The population of this study was selected randomly from five villages of West Garo Hills District and includes a total of 120 farmers, out of which 60 farmers were ICT users and 60 farmers were non-ICT users. Data were collected from primary source through the use of interview schedule. Collected data were tabulated and analyzed using averages and percentages mostly.

Results and Discussions

Table 1. Educational background of the farmers in West Garo Hills District, Meghalaya

Category	ICT users (per cent)	Non-ICT users (per cent)	Overall per cent
Illiterate	11.71	18.62	15.25
Primary	59.49	67.57	63.64
High School	11.08	8.11	9.55
Matriculation	10.44	3.30	6.78
Higher Secondary	4.11	2.10	3.08
Graduate and above	3.16	0.30	1.69
Total Literate	88.29	81.38	84.75

As shown in Table-1, it was found that the majority (84.75 per cent) of respondents were literate. The literacy rate among the ICT users (88.29 per cent) has been found to be slightly higher than the non-ICT users (81.38 per cent).

Primary education (63.64 per cent) was the most prevalent level of education among the sample farmers, followed by high school education (9.55 per cent), matriculation (6.78 per cent), H.S. Level (3.08 per cent) and graduation and above (1.69 per cent).

Table 2. Preferred source of ICT by farmers in West Garo Hills District, Meghalaya

Sl. No	Sources of Information	ICT users (per cent)	Non-ICT users (per cent)	Overall per cent
I.	Family/ Parents	23.33	30.83	54.17
II.	Personal Experience	5.00	11.67	16.67
III.	Friends/ Relatives	7.50	17.50	25.00
IV.	Radio	1.67	2.50	4.17
V.	Television	30.00	30.00	60.00
VI.	Mobile Phones	39.17	33.33	72.50
VII.	Farmers Group	6.67	0.83	7.50
VIII.	Internet	21.67	3.33	25.00
IX.	Newspaper & Magazines	6.67	2.50	9.17
X.	Books	0.83	1.67	2.50
XI.	Agricultural Extension offices	35.00	36.67	71.67

Table 2 reveals that mobile phones (72.50 per cent) were the most preferred source of ICT information among the farmers, followed by agricultural extension offices (71.67 per cent), television (60.00 per cent), family and parents (54.17 per cent), friends and relatives (25.00 per cent), internet (25.00 per cent), personal experience (16.67 per cent), newspaper and magazines (9.17 per cent), farmers group (7.50 per cent), radio (4.17 per cent) and books (2.50 per cent).

The ICT resources most preferred by the farmers were mobile phones in the study area while books were the least preferred amongst all the sources of ICT information. This was due to the reason that mobile phones were easily affordable and easier to use. Mobile phones have been reported to be widely possessed ICT tool among farmers (Hassan *et al*., 2008; Okello *et al*., 2010). Today, with the increasing growth of mobile telephony in both the urban and rural areas it becomes easy to deliver extension services to the farmers.

Table 3. Constraints faced by the farmers in using ICT

Sl No.	Category	ICT users (per cent)	Non-ICT users (per cent)	Overall per cent
1.	Lack of awareness of information sources	26.67	45.83	72.5
2.	Power fluctuations	33.33	36.67	70.00
3.	Poor network connectivity	20.00	44.17	64.17

4.	Inadequate technical knowledge/skill to operate ICT facilities	22.50	40.83	63.33
5.	Inadequacy of tools (smart phones, laptops)	9.17	20.00	29.17
6.	High cost of device	10.83	15.83	26.67
7.	Low income of farmers	15.00	25.00	40.00
8.	Low levels of education/literacy	11.67	25.00	36.67
9.	Poor access to ICT Device	14.17	5.83	20.00
10.	Lack of training on ICT	30.83	30.83	61.67
11.	Language barrier	6.67	12.50	19.17

Table 3 indicates that lack of awareness of information sources among the farmers was the major constraint in ICT use. The second major constraint was power fluctuations in the area consisting of 70 per cent overall respondents, followed by poor network connectivity (64.17 per cent). The other important constraints encountered by the farmers were lack of training on ICT (61.67 per cent), inadequate technical skills to operate ICT facilities (63.33 per cent) and low income of farmers (40.00 per cent). It was noticed that, out of overall 72.5 per cent respondents, 45.83 per cent of non-ICT users while only 26.67 per cent of ICT users found lack of awareness of information sources as the most important constraint in ICT utilization.

Conclusion and Recommendations

About 80 per cent of the rural economy of Meghalaya is dependent on Agriculture. Therefore, ICT can play a major role in uplifting the rural small landholding farmers of the region by increasing the agricultural productivity and profitability. However, the application of ICT in the Rural Development sector of West Garo Hills has been relatively slow. The major reasons were lack of awareness of information sources, poor state of electricity in West Garo Hills, poor network connectivity, lack of technical skills, lack of trainings, and language barrier. Based on the analysis, an attempt has been made to recommend some measures to improve the ICT use in the area which are listed as below:

1. Firstly, short term trainings on ICT should be encouraged to raise awareness of information sources.
2. Secondly, basic infrastructure needs particularly power supply and mobile network connectivity and internet should be improved for the effective use of ICT among extension workers and the farmers.

3. Amongst others, language barriers can be reduced by making the information available in regional language.

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