A Study on Awareness of ICT Mediated Extension Services in Arghakhanchi District of Nepal

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Abstract**:** ICT consist of communication technology, computer technology and information management technology which is useful to reach large number of farmers in short period of time and provide appropriate information to the farmers. This study following the multistage purposive and random sampling technique in Arghakhanchi district of Nepal. The study intended to analyze the awareness of different ICTs initiatives in agriculture and find the relationship between socio economic variables and awareness of ICT mediated extension services in study area. Data was collected by structured interview schedule and used various statistical analysis tools for interpreting the data such as Frequency, Percentage, Arithmetic Mean, Standard Deviation, Correlation co -efficient. The detailed analysis of the study shows that majority of respondent possessed low level of awareness of Telecommunication and Internet based initiatives and medium level of awareness of Media initiatives in agriculture. Relationship analysis between the independent and dependent variable show that Education, land holdings, family income, Extension Agency Contact, Mass Media Exposure, media ownership, social participations and Information Seeking Behavior showed positive and significant relationship whereas, age and experiences show negatively significant relation with the awareness, of ICT initiatives in agriculture.

Keywords**:** ICT, Telecommunication initiatives, Media initiatives, Internet- Based initiatives, Awareness, Farmers

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1. Introduction

In Nepal, agriculture is an important sector where the majority of the total population is dependent on it. The agriculture sector contributes 25.08 % of total GDP and about 60.4 % of the country's population depends on agriculture and allied enterprise for their livelihood ((Central Bureau of Statistics, 2077/2078). The overall performance of agriculture mainly relies on the performance of small farmers. Hence, empowering small and marginal farmers is most important for the overall development of the agriculture sector in Nepal. Small-scale farmers often face a knowledge gap with regards to various factors such as adopting best practices, incentives provided by the information needs of the Nepalese farmer in the country is varied due to diverse cropping because each area and each crop need different information and package of practices. So, in this context, ICT can play a vital role in disseminating technology to the farmers.

government and private sector, market availability, etc. Scientists are doing a tremendous job in discovering new technologies and methods to increase agricultural production and productivity. But due to a lack of access to information and awareness, targeted farmers are still beyond this development. A wider gap between the extension agencies and farmers (1:1333 (MOAD, 2017) has resulted in hindering in technology dissemination in rural areas of Nepal. In Nepal extension service coverage is significantly less, which is only 15%. Due to lack of awareness, farmers proceed their farming based on their traditional experiences. So, disseminating information to a large number of farmers is a very challenging task for a country like Nepal. The

Nowadays Mobile phone, Television, Radio and other ICT tools are effective in disseminating information. Almost all the farmers even in rural areas are using different ICT tools throughout the country. The government and non-government organizations have launched different ICT initiatives for agriculture sector, despite such a

considerable attempt, many farmers are not well aware of these initiatives, and they are not using these tools, which is one of the main reasons of low impact of ICT in agriculture. So, keeping these facts in mind, the present study entitled 'A Study on ICT Mediated Extension services in Arghakhanchi District of Nepal' was undertaken with following objectives:

1. To study about awareness of ICT mediated extension services provided by the government and private agencies in study area.
2. To find the relationship between socio economic variables and awareness of ICT mediated extension services.

1.1 Review of literature:

Reddy (2016) conducted a study on - A study on utilization pattern on information and communication technologies (ICTs) among dairy farmers in Chittoor district of Andhra Pradesh he found that Age was negatively and significantly correlated with the awareness or knowledge with the ICTs whereas Education, Income, Information seeking behaviour was positively and significantly correlated with awareness or knowledge with the ICTs.

Minz and Abhilasha (2018) conducted a study on - A study on awareness, access and utilization pattern of weather information sources by the farmers she found that mass media exposure and education were positively and significantly correlated with awareness of weather information sources.

Shreya (2019) in her study on - Study on the use of ICT tools for crop practice in Samastipur and Katihar districts of Bihar reported that Occupation, Education, Annual income, mass media exposure and extension contact were positively and significantly correlated with uses pattern of ICT by the farmers.

Bucci *et al.* (2019) conducted a study on – 'Factors affecting I.C.T. adoption in agriculture: A case study in Italy' published on Calitatea. They observed that application of Precision Agriculture solutions was dependent on the socio-economic factors such as age, income, and gender, etc., Institutional factors such as contact with extension agency, social participations, farmers perception etc., Behavioral factors such as attitude, skills and knowledge and technological factors such as digital literacy, compatibility etc. Old age farmers, Farmers with low education & low income were not interested in using computer facility in their farm. Economic factor were the major constraints for the adoption of precision farming in the research area

Nwokoye (2019) conducted a study on – 'Socio-economic determinate of information and communication technology adoption among rice farmers in Ebonyi State, Nigeria' published on Nigerian Journal of Economic and Social Studies He found that adoption and utilization of ICT were mostly dependent on the age of the Farmers, education level, income of the Farmers, training on ICT and cost of the ICT devices. He also observed that education and training on the ICT were vital drivers of ICT adoption on rice farming and increase the production of rice farming.

Kumar *et al.* (2021) conducted a study on – 'Farmers awareness regarding information and communication technology-based equipment in agriculture sector in Hariyana' They found that experienced farmer, highly income farmers are more aware about ICT tools in agriculture and they also found that majority of the farmers are aware about the ICT tools in agriculture.

Chiazoka *et al.* (2021) conducted the study on - Awareness and usage of information and communication technologies (ICTs) among farmers in federal capital territory, Nigeria, they found that farmers are aware of as well as use ICT facilities such as GSM, radio set, television, print media, internet/e-mail, computer, social media for getting the information on agriculture

2. Materials and Method

There are seven provinces and 77 districts in Nepal. Out of this, Arghakhanchi district of Lumbini

province was purposively selected for the study. The present study was carried out in Sandhikharka municipality and Malarani rural municipality of Arghakhanchi district. There are 12 wards in Sandhikharka municipality and six wards in Malarani rural municipality. Out of 12 wards of the Sandhikharka municipality, ward No. 2, 6, 11 were selected randomly. Whereas from 6 wards of Malarani rural municipality, ward No. 3, 4 and 5 were randomly selected. From each selected ward, 30 farmers were selected randomly for the present study. Hence the total number of respondents was 180. The data were collected by using the structured interview schedule.

3. Result and Discussion

The data presented in table I shows that only 0.33% of respondent are aware of SMS services provided by different agencies on agriculture. Among Media initiatives in agriculture, Krishikarakaram on National T.V got first rank (58.88%) in awareness followed by Krishikaryakaram on NTV (52.23%), Krishi TV channel which is broadcasted in all region of Nepal(47.23%), Krishisamachar (37.24%) and krishikaryekaram (23.88%) broadcasted on Radio Nepal, Hello Kisan program broadcasted on Krish T.V (17.79%), Krishi related program on Krishi TV (14.45%), Krishi diary (12.22%) and booklets published by AICC Nepal (2.24 %).And among internet-based initiatives in agriculture, agriculture-related program on YouTube got the first rank (16.67%) in awareness followed by Smart Krishi apps (15%), Krishi guru app (12.23%), agriculture news on FB (11.12%), and NARC Krishi apps (8.34%), Geokrishi (3.33%) respectively

Table I: Distribution of respondents according to their awareness of telecommunication initiatives, Media initiatives and Internet based initiatives in agriculture (n= 180).

S. No		**Aware**		**Partially Aware**		**Not Aware**	
1	**Telecommunication Initiatives**	**Frequency**	**(%)**	**Frequency**	(%)	**Frequency**	**%**
	SMS Services	6	03.33	30	16.67	144	80.00
2	**Media initiatives**						
a.	**TV**						
1.	Krishisamachar on National T. V	106	58.88	57	31.66	17	09.46
2.	Krishikarakaram National T. V	103	52.23	60	33.33	17	09.44
3.	Krishi T.V Channel	85	47.23	58	32.22	37	20.55

4.	Hello kisan on Krishi T.V Channel	32	17.79	79	43.88	69	38.33
5.	Krishi Related Program on Krishi T. V	26	14.45	76	42.22	78	43.33
6.	Budhiaama Sanga krishi Bigya on Krishi T.V Channel	17	9.44	72	40.00	91	50.56
7	Swastha Kisan on Krishi T.V Channel	8	4.45	54	30.00	118	65.55
b.	**Radio**						
1.	Radio Krishisamachar	67	37.24	61	33.88	52	28.88
2.	Radio Krishikaryakaram	60	23.88	77	42.77	43	33.35
C	**Print Media**						
1.	Krishi Diary	22	12.23	23	12.77	135	75.00
2.	Booklets	4	02.24	2	1.10	144	96.66
3.	**Internet-based initiatives:**						
1	YouTube	30	16.67	38	21.11	112	62.22
2.	Smart Krishi	27	15.00	6	03.34	147	81.66
3.	Krishi Guru	22	12.23	10	05.55	148	82.22
4.	Facebook	20	11.12	40	22.22	120	66.66
5.	NARC	15	08.34	8	04.44	157	87.22
6.	Geo Krishi	6	03.33	8	04.45	166	92.22

The data represented in Table II shows that, Telecommunication initiatives and Internet based initiatives has lower level of awareness whereas, Media initiatives has medium level of awareness among the farmers in a study area

Table II: Distribution of respondents according to their level of awareness of different types of initiatives based on Mean and Standard Deviations (n=180).

S. No	Level of Awareness	Range	Frequency	Percentage
A	**Telecommunication Initiatives**			
1	Low < (Mean – S.D)	<0	144	80
2	Medium (Mean ± S.D)	0-1	30	16.66
3	High > (Mean – S.D)	>1	6	03.33
			Mean = 0.496 S.D = 0.233	
B	**Media Initiatives**			
1	Low < (Mean – S.D)	<4.32	35	19.44
2	Medium (Mean ± S.D)	4.32- 14.35	114	63.33
3	High > (Mean – S.D)	>14.35	31	17.23
			Mean = 9.344 S.D = 5.015	
C	**Internet – Based initiatives**			
1	Low < (Mean – S.D)	<1.21	120	66.66
2	Medium (Mean ± S.D)	1.21 – 4.699	33	18.34
3	High > (Mean – S.D)	>4.699	27	15
			Mean = 2.963 S.D = 1.744	

It could be observed from Table III that among ten profile characteristic of farmer eight variables viz. Education, land holdings, family income, Extension Agency Contact, Mass Media Exposure, media ownership, social participations and Information Seeking Behavior showed positive at 0.01. level of probability and significant relationship. And other variables such as age and experiences show a significant negative relation at 0.01. level of probability.

These findings are in line with the research findings of **Chandana (2017)** on**-** Extent of information and communication technology utilization by agriculture officers in Andhra Pradesh, **Reddy (2016)** on **-** A study on utilization pattern on information and communication technologies (I.C.T.s) among dairy farmers in Chittoor district of Andhra Pradesh**, Shreya (2019)** in her study on - Study on the use of ICT tools for crop practice in Samastipur and Katihar districts of Bihar, **Bucci *et al.* (2019)** conducted a study on – 'Factors affecting I.C.T. adoption in agriculture: A case study in Italy' published on Calitatea and **Kumar *et al.* (2021)** conducted a study on – 'Farmers awareness regarding information and communication technology-based equipment in agriculture sector in Hariyana.

Table III: Relationship between the profile characteristic of farmer and awareness of ICTs initiatives among the farmer (Pearson product-moment – correlation)

S. No	Variables	Correlation coefficient (r)	P-Value
1.	Age	-0.315**	0.00
2	Education	0.457**	0.000
3.	Experiences	-0.325**	0.000
4.	Land Holding	0.242**	0.001
5.	Family Income	0.375**	0.000
6.	Information Seeking Behavior	0.346**	0.000
7.	Media Ownership	0.428**	0.000
8.	Mass Media Exposure	0.449**	0.000
9.	Social Participations	0.402**	0.000
10.	Extension Agency Contact	0.505**	0.000

**. Correlation is significant at the 0.01 level (2. Tailed).

*. Correlation is significant at the 0.05 level (2. Tailed).

4. Conclusion

The study concluded that most of the farmers in the research area have low level of awareness of Telecommunication and Internet based initiatives whereas, most of the farmer have medium level of awareness about media initiatives. Among Media initiatives, Krishikarakaram on National T.V had high awareness and in internet-based initiatives, agriculture program on YouTube had high awareness. Education, land holdings, family income, Extension Agency Contact, Mass Media Exposure, media ownership, social participations and Information Seeking Behavior showed positive and significant relationship at 0.01 level of probability. This means that these variables exert their influence positively on awareness of ICTs initiatives. with the increase in these variables the awareness of ICT initiatives of farmers will increase. And other variables such as age and experiences show a significant negative relation at 0.01 level of significance at 0.01 level of probability. This means that these variables exert their influence negatively on awareness of ICT among the farmers. The result of the study would be helpful for student, researchers, policymakers, scientist, extension workers, non-government agencies and even for government agencies in formulating new policies and programs.

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