

The Availability and Use of Information Communication Technologies by Extension Agents in Delta Agricultural Development Project, Delta State Nigeria

B. O. Ovwigho¹, P. A. Ifie², R. T. Ajobo³ and E. I. Akor¹

1. Department of Agricultural Economics, Delta State University, Asaba Campus, Asaba, Nigeria

2. Department of Agricultural Education, College of Education, Warri, Delta State, Nigeria

3. Department of Business Administration Faculty of Management Sciences, Delta State University, Asaba Campus, Nigeria

KEYWORDS Agricultural Extension. Dissemination. Transmission. Electronic Media. Research

ABSTRACT The study evaluated the availability and use of information and communication technologies. The specific objectives were to identify the information communication technologies available to the extension agents; ascertain the frequency of use of information communication technologies; identify the constraints facing extension agents in the use of information communication technologies; identify the constraints facing extension agents in the use of information communication technologies; and examine the relationship in the frequency of use of interpersonal communication, print media, and information communication technologies. The sample was made up of 65 extension agents randomly selected from the three senatorial districts in the state. Questionnaire were used in data collection. Data were analysed by the use of percentage, mean and chi-square test. It was found that radio (56.92%), television (100%), mobile phone (98.46%), audio cassette player (78.46%), DVD/ VCD (100%), video projector (76.92%), computer (73.85%) and Diskette (100.00%), were available to most of the extension agents. The extension agents do not often made use of information communication technologies in disseminating information to the farmers. They often made use of Diskette ($\bar{x} = 2.51$). The constraints facing the extension agents in the use of information communication technologies were electricity ($\bar{x} = 3.42$), inadequacy of ICTs ($\bar{x} = 3.75$), lack of fund from government ($\bar{x} = 2.98$), high cost of computer and other ICTS ($\bar{x} = 2.94$), problem connectivity ($\bar{x} = 2.65$), lack of supportive government policies and legislation on ICTs ($\bar{x} = 3.63$), lack of on the job training for ICTs ($\bar{x} = 3.92$), low level of education of farmers ($\bar{x} = 3.37$), and transportation difficulties ($\bar{x} = 3.86$). There was a significant relationship ($P < 0.05$) in the responses of the extension agents to the use of ICTs. The Federal and state governments as well as the world bank being the sole proprietors of the Delta Agricultural Development Project should provide and stimulate the use of information communication technologies.

INTRODUCTION

Agricultural extension services in all its ramification is coterminous with the use of variegated communication strategies. The evolution of mankind is replete with progressive era of information communication. The use of inter-personal communication appeared to have dominated the primitive phase of man's evolution. Hoffmann (2002), observed that the history of European civilisation was directly related to the history of communication and media. From the evidence of globalisation we can surmise that we are in the era of information and communication technologies

According to the Food and Agriculture Organization, FAO (1993) information and communication technologies (ICTS) were technologies used in collecting, processing storing, retrieving, disseminating and implementing

data and information using micro electronics, optics and telecommunication and computers. Broadly, the Technical Centre for Agricultural and Rural Cooperation (CTA 2003) defined information and communication Technologies as those technologies that facilitate communication and the processing and transmission of information by electronic means; Odame *et al* (2002) and Arokoyo (2005) stated that ICTS covered a wide range of equipment and services. In agricultural extension, the ICTS included radio, television fixed and mobile phones, short message services, world wide web, search engines, packet digital assistants, cameras, video, e-mail, computer, contact data bases and systems, CD-Rom, DVD, current awareness, rural radio and web publishing.

Statement of the Problem: The use of information and communication technologies is relatively new compared to the traditional information technologies. Manu (2003) as cited

by Arokoyo (2005) found that in most developing countries extension agents have used different types of traditional information communication technologies which included radio, drama, and video/television. Presently, both the extension service and other service providers and their clients were experimenting with new digital opportunities that could be effectively used to exchange, process, manage and communicate information and knowledge. Lobo (2007) affirmed that multimedia communication campaigns were among the most effective methods of informing, training and diffusing appropriate technologies to farmers. Omotayo (2005) stated that a number of development in many developing countries were shaping the future of extension services and setting the stage for the adoption of ICTs.

According to Kiplang'at (2003) the impact of the use of ICTs in extension delivery still remained minimal as confirmed by a recent study to determine the diffusion of ICTs in communication of agricultural information among researchers and extension workers in Kenya. These findings inevitably call for the need to investigate the availability and use of ICTs among extension agents working with the Delta State Agricultural Development projects.

Objectives of the Study: The study evaluated the availability and use of information and communication technologies by extension agents in Delta Agricultural Development project, Delta State. The specific objective were to:

- i. identify the information and communication technologies available to the extension agents;
- ii. ascertain the frequency of use of information and communication technologies;
- iii. identify the constraints facing extension agents in the use of information and communication technologies;

Hypotheses: One null hypotheses was tested; H_{01} : There is no significant relationship in the frequency of use of the various communication and information technologies.

METHODOLOGY

Sampling Procedure and Sample Size: The research design was a survey and structured questionnaire were used. The sampling frame had one hundred and thirty extension (130) agents. This comprised fifty (50) in Delta Central forty two (42) in Delta North and thirty eight (38) in

Delta South senatorial districts. Fifty (50) per cent each corresponding to 25, 21 and 19 were randomly selected from Delta Central, Delta North and South respectively. Thus the sample was made up of sixty five (65) extension agents.

Method of Data Analysis. Data were analysed by the use of percentage, mean and Chi-square test; A four point rating scale was used to measure the frequency of use of information and communication technologies, and constraints facing extension agents in the use of information and communication technologies. A mean score, 2.50 and above, was regarded as often and agree and below as not often and disagreed.

RESULTS AND DISCUSSION

Available Information and Communication Technologies

A universe of seventeen (17) information and communication technologies were collated. The extension agents were made to respond to the information and communication technologies which were accessible to them for the purpose of providing extension services to the farmers. The results are presented in Table 1.

The information and communication technologies which the extension agents had access to either at homes or offices were radio (56.92%), television (100.00%), mobile phone (98.46%), audio cassette player (78.46%), DVD/VCD (100.00), Video projector (76.92%), computer (73.85%), and diskette (100.00%). The information and communication technologies which were not available to the extension agents included slide projector (7.69%), video camera (4.62%), cable/satellite dish (20.00%), in-focus projector (1.54%), internet services (38.46%), flash drive (40.00%), CD-Rom (0.00%), video cassette containing agricultural programmes (7.69%), and CD plate containing agricultural programmes (3.08%). Most of these technologies were owned by the extension agents. These included mobile phones, VCD/DVD, video projector and diskettes. These technologies assisted the extension agents in discharge of their duties.

The Use of Information and Communication Technologies

The extension agents were asked to respond to the frequency of use of the information and communication technologies (Table 2)

Table 1: Available information and communication technologies.

S. No.	ICTS	Responses (n=65)		Remarks
		Yes (%)	No (%)	
1.	Radio	56.12	43.08	Available
2.	Television	100.00	0.00	Available
3.	Mobile phones	98.46	1.54	Available
4.	Slide projector	7.69	92.31	Not available
5.	Audio cassette player	78.46	21.54	Available
6.	DVD/VCD	100.00	0.00	Available
7.	Video Camera	4.62	95.38	Available
8.	Video Projector	76.92	23.08	Available
9.	Cable/Satellite Dish	20.00	80.00	Not available
10.	Computer	73.85	26.15	Available
11.	In-focus projector	1.54	98.46	Not available
12.	Internet (w.w.w) services	38.46	61.54	Not available
13.	Diskette	100.00	0.00	Available
14.	Flash Drive	40.00	60.00	Not available
15.	CD-Rom	0.00	100.00	Not available
16.	Video cassette containing agricultural programme	7.69	92.34	Not available
17.	CD plate containing agricultural programme	3.08	96.92	Not available

The responses were dichotomised into “not often” and “often” as shown under the remark columns by using a cut-off point of 2.50. Diskettes ($\bar{X} = 2.51$) was the only often used information and communication technologies out of the universe of fifteen (15) technologies. The use of diskettes by the extension, agents may not have a serious effect on communicating technologies to the farmers because of their low level of literacy.

Table 2: Frequency of use of information and communication technologies.

S. No.	ICTS	Mean Response $\bar{X}$ (max=4)	Remark
1.	Radio programmes	1.78	No
2.	Television programmes	2.42	No
3.	Mobile phones	1.80	No
4.	Getting information from the internet	2.05	No
5.	CD-Rom	1.00	No
6.	Use of diskettes	2.51	No
7.	Use of flash drive	1.89	No
8.	Use of CD plates	1.69	No
9.	Use of in-focus projector	1.14	No
10.	Use of slide projector	1.00	No
11.	Getting information from cable/ satellite dish	1.83	No
12.	Use of video projector	1.18	No
13.	Use of video camera	1.00	No
14.	Use of video films containing programme	1.78	No
15.	Use of audio cassette to teach farmers	1.62	No
Total			No

$\chi^2 = 494.18$

There was a significant relationship ($P < 0.05$) in the responses of the extension agents to the use of information and communication technologies ($\chi^2 = 494.18$). Arokoya (2005) found that television was the major ICTs used in Nigeria. He stated that rural based radio programmes were virtually unknown in Nigeria unlike Franco-phone West Africa countries. The information content of these channels was more provider driven and this had a serious implication for extension delivery. Similarly Kiplang'at (2003) found that radio was the most important ICT currently used in extension delivery followed by television and video in Kenya. In this study even radio and television were not used by the DADP extension agents. To rely solely on individual contact of extension delivery is apparently cumbersome. The use of mobile phone to communicate with farmers was not common. CTA (2007) found that a woman in Ghana could receive prices from 380 Africa markets for her products through the cell phone.

Constraints to the Use of ICTs

The extension agents were made to respond to ten (10) structured constraints facing them in the use of ICTS (Table 3).

The extension agents disagreed with only one of the constraints namely lack of technical know-how ($\bar{x} = 2.00$). The extension agents agreed with nine of the constraints : lack of electricity ($\bar{x} = 3.42$), inadequate ICTs ($\bar{x} = 3.75$), lack of fund ($\bar{x} =$

Table 3: Constraints to the Use of ICTS

S. No.	Constraints	Mean Response $\bar{X}$ (max=4)	Remark
1.	Lack of electricity	3.42	Agree
2.	Inadequate ICTs	3.75	Agree
3.	Lack of fund	2.98	Agree
4.	Lack of technical know-how	2.00	Disagree
5.	High costs of computer and other ICTS	2.94	Agree
6.	Problem connectivity	2.65	Agree
7.	Lack of supportive government policies and legislation on ICTS	3.63	Agree
8.	Lack of on Job Training for ICTs	3.92	Agree
9.	Low level of education of farmers	3.37	Agree
10.	Transportation difficulties	3.86	Agree

2.98), high costs of computer and other ICTS ($\bar{x}$ = 2.94), problem connectivity ($\bar{x}$ = 2.65), lack of supportive government policies and legislation on ICTS ($\bar{x}$ = 3.63), lack of on Job training for ICTS ($\bar{x}$ = 3.92), low level of education of farmer ($\bar{x}$ = 3.37), and transportation difficulties ($\bar{x}$ = 3.86). These findings supported the views of Omotayo (2005) that many rural areas of developing countries had no access to the basic telecommunication services that support key ICTs like the telephone and internet. In Nigeria, electricity is a major problem thwarting the use of ICTs. Arokoya (2005) found that the major constraint affecting the use of ICTs were erratic and unstable power supply, problem connectivity, low level readiness of research and extension organisations to embrace the use of ICTs, high costs of telephone services, limited access to computers, lack of communication policy high level of rural poverty and illiteracy, limited access to world wide data bases on CD-Rom or DVD due to foreign exchange constraints.

CONCLUSION

Many of the extension agents did not have access to information and communication technologies. Consequently, the extension agents did not make use of information and communication technologies in disseminating research information to farmers. A lot of constraints are facing the extension agents in the use of information and communication technologies. The extension agents still depended much in the use of individual contact method of extension delivery. The constituted governments and NGOs should provide and stimulate the use of information and communication technologies. Appropriate legislation should be made on the use of ICTS.

REFERENCES

- Arokoya T 2005. ICTs Application in agricultural extension services delivery. In: SF Adedoyin (Ed): *Agricultural Extension in Nigeria*. Ilorin: Agricultural Extension Society of Nigeria. pp. 245-251
- CTA 2003. ICTs -Transforming Agricultural Extension? An e-discussion 20th August - 29th September 2003.
- CTA 2007. Instant Market Linkage. *Spore*. No. 128, P. 3.
- FAO 1993. *The Potentials of Micro-computers in Support of Agricultural Extension, Education and Training*. Rome: FAO.
- Hoffmann V 2002. *Picture Supported Communication in Africa*. Wageningen: CTA
- Kiplang'at J 2003. Does Agricultural Extension have a new beginning because of ICTS? Reflection on experience in Sub-Saharan Africa. *Keynote paper presented at the 6th consultative Expert Meeting on CTA's Observatory on ICTs*. Wageningen Sept 23-25, 2003.
- Lobo 2007. Getting the Message Across with Multimedia. *Spore*. No. 128, P. 16.
- Odame H, Hafkin N, Weseler Gand, Boto M 2002. Gender and Agriculture in the Information Society. *ISNAR Briefing Paper*, No.5.
- Omotayo AM 2005. Information Communication Technology (ICT) and Agricultural Extension: Emergency Issues in Transferring Agricultural Technology in Developing Countries. In: SF Adedoyin (Ed): *Agricultural Extension in Nigeria*. Ilorin: Agricultural Extension Society of Nigeria