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Full Length Research Paper

Use of information and communication technologies by rural farmers in Oluyole local government area of Oyo State, Nigeria

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This study investigated the role, impact, level of use and potentials of integrating Information and Communication Technologies (ITCs) into agricultural development process in Oluyole local government area of Nigeria. The study observed that as much as finance and infrastructure were important in developing agriculture, much more were required in the form of ICTs to adequately extend innovations to effectively employ resources, take advantage of new methodologies and markets to better the lots of living standard of the farmers. Based on the findings, it was recommended that ICTs should be incorporated into all endeavours related to agricultural development. Awareness should be generated among young and middle-aged farmers about availability of ICT services in order to increase farmers' participation in ICT initiatives. Also, since small or and marginal farmers were using ICTs services, more emphasis should be given to providing information strictly relevant to their farming systems. Strong interfaces should be developed at village level so that the problem of computer illiteracy among farmers may be resolved.

Key words: Nigeria, Oyo state, information, communication, technologies, rural farmers.

INTRODUCTION

Information and Communication Technology (ICT) is the scientific, technological and engineering discipline of management technologies used in the handling of information, processing and application related to computers. ITC is also concerned with interactions between man and machines; and associated socio-economic and cultural matters (Osuagwu, 2001). Information technology could be regarded as the coming together of computing and telecommunications for the purpose of handling information. The bottom-line is that information technology is an application that is computer-based for the purpose of sharing ideas, data, and other relevant information and the improvement of the status quo for development. However, in the recent past, there has been revolution with regards to information and communication technologies (ICTs). The world is going through an information technology revolution that has drastically changed many facets of human life, from politics, education, and entertainment to industry (Ajayi, 2002). Agriculture and its associated natural resources management are not likely to be exceptions. Omotayo (2005) observed that agricultural extension depends largely on information exchange between and among farmers and a broad range of other actors. However, Oluwadare and Okunlola (2006) pointed out that Nigeria's economy is rural-based, with over 70% of the population deriving their means of livelihood from agriculture either directly or indirectly and further stated that these rural areas are still starved of most modern facilities such as potable water, electricity, good roads, decent housing, educational facilities, modern health facilities, storage facilities and most especially communication facilities.

Frontline extension workers who are the direct link

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Table 1. Socio economic characteristics of the respondents (farmers).

Variable	Frequency	Percentage
Age distribution (in years)		
21-30	20	28.6
31-40	21	30.0
41-50	24	34.3
51-60	5	7.1
Total	70	100
Sex distribution		
Male	69	98.6
Female	1	1.6
Total	70	100
Highest academic qualification		
First school leaving certificate	30	429
National Diploma (OND)	9	12.9
National Certificate of Education (NCE)	5	7.1
Higher National Diploma (HND)	15	21.4
First Degree	2	2.9
Adult Education	9	12.9
Total	70	100
Marital status		
Single	19	27.1
Married	46	65.7
Divorced	3	4.3
Widowed	2	2.9
Total	70	100
Religion		
Christianity	38	54.3
Ilam	32	45.7
Total	70	100

between farmers and other actors in the agricultural knowledge and information system could be well positioned to make use of ICT to access expert knowledge or other types of information that could facilitate the accomplishment of their routine activities. In this respect the objectives of the study were to:

(i) Determine the socio-economic characteristics of the farmers in Oluyole Local Government Area.
(ii) Examine selected ICTs devices and determine the most frequently used by the farmers.

METHODOLOGY

The study area for this survey was Oluyole Local Government Area of Oyo State, Nigeria. Primary data on personal characteristics of farmers' awareness, access and utilization, problems militating against the use of ICT and types of ICT needed were collected by means of 90 questionnaires administered and filled directly or indirectly (by oral interview) at seminars, meetings and visits to farmers in Oluyole local government area of Oyo State, Nigeria. Oyo State is an inland state in south western Nigeria, with its capital at Ibadan. It is bounded in the north by Kwara state, in the east by Osun State, in the south by Ogun state and in the west partly by Ogun state and partly by The Republic of Benin. Visits were paid to the farmers in question during the meetings, seminars, and in their respective villages. Determining variables of socio-economic importance used were age, sex, educational/academic qualification, marital status and religion of farmers. Respondents' usage (daily, weekly, monthly or occasionally) of ITC (radio, internet, mobile phone, television or combinations) by farmers was respectively noted. Of the ninety (90) copies of the questionnaire administered, seventy (70) copies were retrieved for collation of data for this study. Descriptive and inferential statistics including frequencies, percentages and means were used to analyze the data collected.

RESULTS AND DISCUSSION

The socio-economic characteristics of the respondents considered (age, sex, educational/academic qualification, marital status and religion) crucial in influencing the adoption of new technologies behaviour of the farmers is shown in Table 1. The results showed that majority of the

Table 2. Respondents frequency usage of ICT.

Variable	Frequency	Percentage
Daily	16	22.9
Weekly	19	27.1
Monthly	1	1.4
Occasionally	30	48.6
Total	70	100

Table 3. Respondents usage of ICTs.

Variable	Frequency	Percentage
Radio	48	68.6
Internet	5	7.1
Mobile phones	9	12.9
TV	3	4.3
Multiple response	5	7.1
Total	70	100

farmers (34%) were aged between 41 and 50 years followed by farmers within the age range of 31 to 40 years (30%). This age range could be regarded as middle age, thus, they were expected to be innovative and economically active. Those of the age range 21 to 30 years constituted 20% while 5% formed those of the age range of 51 to 60 years. This implies that on the average, 64.3% of the respondents were between 31 and 50 years of age. On gender distribution, the study revealed that 98.6% were males while 1.4% was women. This means that majority of the people that engage in agriculture and use ICT for agricultural developments were males. The low presence of women in Agriculture at Oluyole was similar to the findings of Odewale (1995) who noted that only about a quarter of farmers sampled were female. This may be due to the drudgery nature of agricultural activities. The study showed that 42.9% of the farmers had first school leaving certificate. Those with Higher National Diploma (HND) and National Diploma (ND) constituted 21.4% each, while 12.9% had NCE certificate while those with B.Sc. were 2.9%. These results showed some level of literacy among the farmers. Okigbo (1998) reported that there was a strong positive correlation between the level of farmers' education and their ability to meaningfully utilize ICT for agricultural development. On marital status, the study revealed that 65.7% of the respondents were married, 27% single, 4.3% divorced while 2.9% were widowed. This showed that most of the respondents were family men and women who require family income to cater for their families.

With regards to religion, distribution of the respondents revealed that practicing Christians constituted 54.3% while 45.7% were Muslims. Table 2 showed that 48.6% of the respondents use ICT in getting agricultural information occasionally, followed by weekly users (27.1%), daily users (22.9%) and 1.4% were monthly users. Radio had remained the most important medium for communicating with the rural populations of developing countries (Helen and Amin, 2002). Agriculture oriented programmes were often held weekly in most parts of Nigeria, such as, on both radio and television stations of Broadcasting Corporation of Oyo State (BCOS) like Agbeloba and FADAMA Korede. The daily and occasional users' use radio in getting political news, general news, sports etc. From Table 3, it can be seen that the highest percentage of respondents (68.6%) used radio as a source of information, followed by mobile phone users (12.9%) and Internet users were 7.1%. Farmers that used more than one device and television were 7.1 and 4.3% respectively. The high percentage of radio users showed that radio was relevant to any strategy that involves rural development in Nigeria. Radio remained one of the most important medium for communicating with the rural populations of developing countries. This remained particularly true in Africa where, according to the BBC World Service, there were estimated 65 million radio receivers in 1996. Also, Niang (2001) revealed that by the end of the 1990s there were approximately 12 newspapers, 52 televisions and 198 radios for every 1000 Africans. The limited access of African farmers to newspapers, televisions and the internet merely reinforced the importance of radio in Africa.

From Table 4, it revealed that the farmers perceived market information including daily updates on the prices of agricultural commodities in the markets of the area as one of the most relevant ICTs services. This was seen as "most essential" by 44.3% of the respondents, 51.4% saw it as "essential" while 4.3% viewed it as "less essential". This enabled them take decision for sale of their products at those markets where their produce would command the best prices and reduced shortage.

Conclusion

This study attempted to contextually highlight the role, impact, level of use and potentials of integrating ICTs into agricultural development process in Oluyole local government of Nigeria. The study observed that in as much as finance and other infrastructure were important in developing agriculture, much more is required in the form of ICTs to adequately translate innovations, effectively employ resources and take advantage of new methodologies and markets to better the lots of living standard of the farmers. While the study called on the Nigerian government to be more committed to funding research and development in the agricultural sector, it however, cautioned that such innovations should be adequately planned for continuity and it must be locally oriented in order to touch nook and cranny taking into cognizance their socio-economic potentials and capabilities. Based on the findings, it is recommended

Table 4. Information needs of farmers.

Variable	Most essential frequency (%)		Essential frequency (%)		Less essential frequency (%)	
Marketing information	31	44.3	36	51.4	3	4.3
Accounting and payment	12	17.1	8	11.4	50	71.4
Input prices and availability	38	54.3	32	45.7	0	0.0
Soil testing and soil sampling information	0	0.0	2	2.9	68	97.1
Dairying and marketing of milk and milk products	13	18.6	5	7.1	52	74.3
Early warning and management of diseases and pest	35	50.0	30	42.9	5	7.1
Farm business and management information	7	10.0	9	12.9	54	77.1
Crop insurance information	2	2.9	5	7.1	63	90.0
General agricultural news	61	87.1	9	12.9	0	0.0
Post-harvest technology	21	30.0	38	54.3	11	15.7
Latest packages of practices	13	18.6	3	4.3	54	77.1
Weather forecasting	17	24.3	52	74.3	1	1.4
Question-and-answer services	8	11.4	3	4.3	59	84.3
Information about rural development programmes and subsidies	67	95.7	3	4.3	0	0.0
Facilitating access to land records/online registration	7	10.0	9	12.9	54	77.1

that efforts should be made to incorporate ICTs in all endeavours related to agricultural development. Awareness should be generated among young and middle-aged farmers about availability of ICT services in order to increase farmers' participation in ICT initiatives. Older farmers should be brought into the chain of ICT networks at a later stage. Also, since small and marginal farmers are using ICTs services, more emphasis should be given to providing information relevant to their farming systems.

Strong interfaces should be developed at village level so that the problem of computer illiteracy among farmers may be resolved. There is the need for ICT policy and regulatory framework that would expend ICT infrastructure, faster ICT-Led innovation, increase access to capital and increase the flow of information and knowledge.

REFERENCES

Ajayi GO (2002). Information and Communication Technologies in Africa- African Response to the Information and Communication Technologies Revolution: Case Study of ICT Development in Nigeria. Paper delivered at International Center for Theoretical Physics (ICTP) Trieste, Italy, 11th-16th Feb, 2002.

Helen HO, Amin K (2002). Listening to stakeholders. Agricultural Research and Rural Radio Linkages. International Service for National Agricultural Research (ISNAR). Briefing paper No. 48. April, 2002. The Hague, Netherlands.

Niang T (2001). Radio in Action: A CTA Experience Presentation to the First International Workshop on farm Radio Broadcasting. February 19-22, 2001, FAO, Rome, Italy.

Odewale OA (2005). Effect of Special Programme for Food Security (SPFS) on farmers' production in Akufo farm settlement of Oyo State. An unpublished HND project work Federal College of Forestry, Ibadan. pp. 33-34.

Okigbo BN (1998). Rural information in agriculture credit administration reading in agricultural finance. Longman Nigeria PLC. Edited by Aja Okorie and Martins O. Ijere. p. 170.

Oluwadare SA, Okunlola JO (2006). Transforming Nigerian Agriculture through Information and Communication Technologies: Challenges and Opportunities. Proceedings of 20th Annual National Conferences of Farm Management Association of Nigeria, Forestry Research Institute of Nigeria, Federal College of Forestry, Jos, Nigeria. 18th-21st Sep., 2006. pp. 246-250.

Omotayo OM (2005). ICT and Agricultural Extension. Emerging issues in transferring agricultural technology in developing countries. In: Adedoyin SF (ed), Agricultural Extension in Nigeria. Ilorin: Agricultural Extension Society of Nigeria.

Osuagwu DE (2001). 'New Technologies and Services in Internet Business'. J. Prof. Administrator, July - Sept, 29-41.