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The Role of ICT in Poverty Alleviation among Rural Farmers in Abia State

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Abstract
The study examined the role of Information and Communication Technology (ICT) in poverty alleviation among rural farmers in Abia State. Specifically, the study examined the role of ICT in rural and agricultural development and identified the type of ICT facilities (hard and software) used in the study area. Data for the study were gathered from 50 respondents (10 extension workers and 40 farmers) randomly selected from the three agricultural zones of the state using structured questionnaire. Percentages and mean scores were applied for data analysis. The study found that the major roles of ICT in the study area were for weather forecast, access to markets, reach out to people outside the locality and mobilize people for occasions. The hardware and software used in the study area were radio, television, sms telephones, telephone mainlines and sms messages. The most frequently used were radio, radio and television. The study therefore, recommended that government should create agricultural website for farmers. Also, farmers should be trained in the use of ICT equipment, while constant power supply should be maintained to enable the farmers use ICT facilities effectively.

Introduction
Poverty is not only an expression of life condition, but a state of mind and a perception of self in the complex web of social relations (Leary and Berge, 2006). McNamara (2003) described the poor as those who lack not only material and financial resources, but also the opportunities to convert the resources they possess (labour, skills/experience and physical resources) in value creating activities, thereby generating income or producing other resources valuable to their peculiar livelihood. It has been noted that poverty in Nigeria is more among rural dwellers that depend on agriculture for livelihood as 69.8% of them were poor compared with 58.2% of the urban population (FOS, 1999). With agriculture being the mainstay of rural economy, rural people produce about 90% of the food sold and consumed locally and 2.4% exported to other countries and Olaniyi, 1995).
Williams (1983) noted the perilous state of rural poverty despite their enormous contribution to the nation's development. It is therefore, pertinent to seek ways of alleviating their poverty situation by tackling headlong all problems they may encounter in the productive activities which is mainly agricultural. Leary and Berge (2006), while recommending E-learning for national and international agricultural development, believe that all agricultural problems do have workable solutions, but the problems lies with the global difficulty of getting the appropriate information to farmers, which ICT can be of a help. According to them ICT can benefit persons of all ages, no matter your locations and help in bridging the gaps created by nature (mountains, deserts, oceans), wars and political boundaries, thereby assembling resources and idea from places that may otherwise be difficult to reach. It can also increase tremendously the number of farmers that can be reached by a simple extension programme.
CTA (2006), describesInformation Technology (IT) as the acquisition, processing, storage and dissemination of vocal, pictorial, textual and numeric information by a microelectronic base to a combination of computers and telecommunication, while Information Communication Technology (ICT) is a set of activities that is facilitated by electronic means through processing, transmission and display of information (Asian development Bank, 2003). Also, Greenidge (2003) defined ICTs as those technologies that can be used to interlink information technologies devices such as personal computers, with communication technologies such as telephones and telecommunication networks.
According to Adeniyi (2010), ICT has assumed a wider dimension covering multitude of media such as telephones, television, radio, video, telex, voice information system, fax, personal computers and the internets. With these, ADB (2003), opines that ICT has become a powerful tool in providing developing countries with varied opportunities to meet vital development goals, which includes poverty eradication far more effective than before. Madukwe (2006), strongly believes that ICT may be the panacea to problems of accessing variety of information sources that are affordable, relevant and reliable by farmers. According to him, in extension, ICT facilitates timeliness of extension delivery, leveraging or the electronic speed of processing, covering, transmitting, storing and retrieving information and protecting data.

In solving problems encountered by farmers, Leary and Berge (2006), believe ICT can assist farmers in decision-making process, farmland ownership and leasing agreement, machinery economics and marketing of produce. It will also help farmers combat and create awareness about agricultural pests and diseases. These,taken care of, will boost agricultural production, increase income of farmers and subsequently, reduce poverty among rural farmers. The need to relate these possibilities to rural farmers in Abia State necessitated a study of this nature.

Purpose of the study

The general purpose was to determine the role of information and communication technology in poverty alleviation among rural farmers in Abia State. Specifically, the study intends to:

1. identify the roles of ICT in rural and agricultural development;
2. identify the ICT components available in the study area;
3. ascertain the level of ICT usage among rural farmers in the study area; and
4. determine effect of ICT in poverty alleviation among rural farmers in Abia State.

Methodology

The study was conducted in Abia State – South east geopolitical Zone of Nigeria with a population of about 2.3 million people (NPC, 2006).The state is demarcated into three agricultural zones of Aba, Ohafia and Umuahia (ADP, 2004). It is a major food crop producing state East of Nigeria. The study population comprised all farmers and extension workers in Abia State. However, Aba agricultural zone was chosen for the study out of the three zones in the state. Farmers were purposefully selected from two local government areas of Ukwa-East and Isialangwa North out of the nine local government areas that make up the zone based on their rurality. The stratified random sampling was used to select two communities each from the two selected local government areas. Ten farmers were randomly selected from each of the four communities and ten extension workers were purposively selected, giving a total of fifty respondents surveyed.

Results and Discussion

Role of ICT in Rural and Agricultural Development

The data in Table 1 show that the roles of ICT in rural and agricultural development were to gain access to markets outside the immediate environment (52%), to forecast weather conditions (50%), the capacity to reach out to a large audience and easy reception of information (40%). This implies that when ICT is used to access market outside the domain of farmers, it translates into huge market for their produces and increaseprofitability. In weather forecast, ICT play a role in helping farmers in decision-making, in relation to the time of planting and harvesting as this is important in agricultural development. In this vein, ICT is empowering farmers with productive and marketing assets, improving their productive capacity, thereby alleviating their poverty status (Ajayi, 2001).

Table 1: Respondents' opinion on the roles of ICT in rural and agricultural development.

Roles	Frequency		Total respondent frequency (n=50)	%
	Ext. worker n=10	Farmer n=40		
Capacity to reach a large audience	10	10	20	40.0
Effectively used for community mobilization	10	9	19	58.0
Information is easily received	10	10	20	40.0
Helps in learning and action	8	7	15	30.0
Link people to other countries	9	9	18	36.0
Used for training and demonstration/presentation	10	6	16	32.0
Used for weather forecast	10	15	25	50.0
Used to access market outside	10	16	26	52.0
Used to access information outside one's domain	8	8	16	32.0
It helps to minimize paper (tradition) to modern way of doing things	4	6	10	20.30

Source: Field Survey, 2010

Types of Hardwares and Softwares available in the study area

On the type of hard and soft wares available in the study area, the respondents believed that the major ICT components prevalent in the area were radio (80%), television (76%) and Global System Mobile (GSM) telephone (70%). Other components are computer (10%), video (16%0, DVD/CD (22%) projector (20%) and film/slides (2%). The use of e-mail and internet services recorded no response in this regard. This implies that, there are presence of telecommunication system and the acquisition of radio and television sets by farmers in the area, but lacks the capacity to use e-mail or the internet services for communication. The inclusion of radio, television, telephone among others as ICT was used to their relevance in the widespread, transfer and sharing of development information (World Bank, 2002).

Table: Types of Hardwares and Softwares available in the study area

Level of ICT Usage in the study area

The data on level of ICT usage by farmers and extension personnel were analyzed using mean statistics, with a minimum acceptable value of 2.5. The findings show that the level of ICT usage among respondents was high for radio (3.00), television (3.00), GSM telephone (2.80) and SMS messages (2.80). The use of computer and projector were rated low (0.70) and (0.60), respectively. Also,were the uses of CD/DVD (2.400, file/Slide (0.50); while the use of e-mail and internet recorded no response. The result implies that with the sue of radio, television, telephones (GSM and main line) and communication through SMS messages, farmers have ample opportunities of accessing vital development information with regards to their livelihood activities. This is in tandem with the opinion of Madukwe (2006), that ICT may be the panacea to problems of accessing variety of information sources that are affordable, relevant and reliable by farmers.

Table 3: Level of ICT usage in the study area

ICT computer	Mean score (x)	Remark
		Low
Computer	0.70	
Radio	3.00	High
Television	3.00	High
Projector	0.60	Low
GSM telephone	2.80	High
Mainline	2.60	High
e-mail	0.00	-
Internet	0.00	-
CD/DVD	2.40	Low
Film/slide	0.50	Low
SMS messages	2.8	high

Source: Field Survey, 2010

Effects of ICT in poverty alleviation among rural farmers

The respondents were of the opinion that ICT could facilitate easy access to markets outside their domain through on-line business transactions (64%). When this occurs, the farmers enjoy increased negotiating power through direct contact with the buyers eliminating middlemen (66%). Increased access to market (64%), increased profit by small-holders (68%), facilitate easy contact between farmers on one side and marketers of farm inputs and buyers of produce (66%). Other positive impacts of ICT in poverty alleviation include easy dissemination of information about market conditions and export requirement (62%) and co-ordination and systematization of agricultural information (60%). With increased market for their products, farmers stand on higher pedestrian to negotiate better, enhance their income and thereby improving their standard of living. This findings seems to agree with the view and expectations of stakeholders in rural development notably, Richardson (2006), that various forces are at work to change agricultural development from the process of technology transfer to the process of facilitating a wide range of communications, information and advocacy services, with ultimate aim of improving the overall living standard of the rural populace.

Also, the findings are also in tandem with the opinions of Leary and Berge (2006), that ICT can assist farmers in decision-making process, farmland ownership and leasing agreement, machinery economics and marketing of produce, help farmers combat and create awareness about agricultural pests and diseases, with the multiplier effects of increased productivity and income, and subsequently, reduce poverty among rural farmer.

Table 4: Effects of ICT on poverty alleviation among rural farmers

Types	Frequency		Total Respondent	%
	Ext. worker n=10	Farmer n=40		
Prices information	8	20	28	56.0
Delivery to farmers	10	22	28	64.0
Marketing and selling online	10	23	32	66.0
Increase the negotiating powers of farmers through the direct contact with buyers	10	20	33	56.0
Enhance the social status of farmers as they come in	8	20	28	60.0
Coordination and systematization of agricultural information	10	20	30	66.0
Facilitating contacts between producers and sellers	10	23	33	62.0
Creating information about market conditions and export requirements	10	21	31	8.0
Enhancing access to information and expertise about effective treatment and modern production methods	9	20	29	46.0
Access to information on land rights	8	15	23	65.0
Increased market access	10	22	32	68.0
Increase profitability of small farmers	10	24	34	

Field Survey, 2010Multiple responses

Conclusion and Recommendations

From the result of this study, it was deduced that there was ICT hard and soft wares available in the study area, in form of radio, television, Global System Mobile (GSM) phones, mainline telephones and SMS messages. It was also found that there were appreciable levels of usage by the people, especially those of radio, television, GSM phones and SMS. Also, the study shows that these ICT components were used primarily to forecast weather conditions, access markets (for inputs and products), communicate easily to a longer audience and for effective mobilization of the people for action. When these happen rural farmers would increase their productivity, access markets even online, boost their negotiating power through direct contact with buyers which will manifest to increased income and well-being.

It is therefore, recommended that federal and state governments should create websites dedicated solely to agriculture and its allied to enable farmers get easy connection to the outside world for useful information relating to the occupation.

Secondly, there is need for local and state governments to open ICT centres where farmers can utilize the facilities and also be trained on the use of ITCs without cost. Acquisitions of such skills are vital for easy access information. There should be deliberate policies on ICT use, with extension officers who should equally be skilled championing the campaign and creating awareness of the benefits of ICT use in the rural areas.

Lastly, power should be provided in the rural communities if the ICT use and its benefits should be functional and meaningful.

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