

Evaluation of Small-Scale Women Farmers' Utilization of ICT in Accessing Agricultural Information in Gwagwalada Area Council, Abuja, Nigeria

Nwali, Perpetual N. ^{1*}, Lai-Solarin, Winifred I. ², Dyaji, Leo¹ and Nimzing, Maryam M.¹

This study was carried out to evaluate the small-scale women farmers' utilization of ICT in accessing agricultural information in Gwagwalada Area Council, Abuja, Nigeria. A purposive and simple random sampling technique was adopted for sampling while questionnaires were used for data collection. A total of 100 respondents were sampled from five out of the ten political wards which includes: Dobi, Ibwa, Paiko, Tungan Maje and Zuba and twenty (20) respondents were randomly selected from each ward for the study. This study revealed that the majority of the respondents (35%) were at the age of 31-40 years, married (46%) had farm size in hectares \leq 5 hectares (68%). It equally indicated that GSM phones (98%), radio (88%), television (83%), among others were the major ICTs available in the study area. On the other hand, the majority of the respondents reported limited or unavailability of ICT facilities such as Zoom (59%), desktop (56%), and Laptop (48%) respectively. The result indicated also that majority of the respondents were using GSM phones (98%), radio (78%), and television (74%) respectively for information sourcing. The study, therefore, recommends among others that there will be a need to create more awareness by educating the small-scale women farmers on the need to embrace other information communication technology facilities such as Zoom and WhatsApp video conference calls usage which can be used to conduct meetings, training and to pass other information as if the people are meeting physically and also to obtain immediate responses to any issues raised during such meetings.

Keywords: Evaluation, Small-Scale, Women Farmers, Utilization, ICT.

Author's Affiliation

¹Department of Agricultural Extension and Rural Sociology, Faculty of Agriculture, University of Abuja, FCT, P.M.B. 117, Abuja, Nigeria.

²Federal Ministry of Agriculture and Rural Development, Abuja, Nigeria.

*Corresponding author. Email: pnkechi94@gmail.com

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INTRODUCTION

The usefulness of Information and Communication Technologies (ICTs) for information dissemination to farmers has been verified by agricultural extension experts, policymakers, information and communication scholars, developmental agencies and other relevant stakeholders (Nwafor, 2020). Information is very important and it serves as an engine of empowerment to farmers in order to improve their agricultural productivity and living standard. Therefore, information related to new agricultural innovation and technologies, quality agricultural seed varieties, production technologies, livestock breeds, animal vaccines, including

means of weed and pest control, as well as relevant market information that will best improve agricultural productivity is constantly required by smallholder farmers (Nwafor, 2020). The importance of engaging farmers and community members in all stages of technology development and the research process cannot be underrated. In practice, the idea of engagement guides the formation of a partnership among farmers, extension workers, industry, and policy makers (Sennuga and Oyewole, 2020). As noted by Deloitte (2012) agriculture is, without doubt, an information sensitive sector. Information use in agriculture has increasingly become necessary and of immense importance for effective decision-making by farmers in order to enhance their standard of living. Therefore, farmers need to be connected to sources where they can derive appropriate, timely, and useful agricultural information (Manfre and Nordehn, 2013). Indeed, in Sub-Saharan Africa, the mobile telecommunication Global System for Mobile communication (GSM), is recognized as experiencing the largest increase in usage among all the ICT of any continent with some unique and innovative uses being found (Sennuga et al., 2020).

Today widely available ICTs can deliver relevant and timely information which can facilitate informed decisions for utilizing resources in the most productive and efficient way by the farmers. Based on this, Oladele (2011) opined that ICTs have become the gateway for transferring agricultural information, due to the immensely optimistic perception among relevant stakeholders such as extension agents, researchers, and farmers, regarding its role. In addition, these ICT tools have the potential not only to transform the agricultural system but also to ensure the prosperity of farm enterprises (Gwaka, 2017).

According to Okeke et al. (2020), different kinds of ICT tools have been developed, put to several tests and launched globally, with records of varying degrees of success. Some of these tools were developed with the main objectives of helping farmers to improve their livelihoods through increased agricultural productivity and income generation, or by reducing risk factors inherent in crop and animal production. ICTs are those tools or applications that aid information exchange, data collection, collation, and analysis (Shemfe, 2018). It can revolutionize the farming sector (Lokeswari, 2016) and as such can be of immense benefit to all Nigerian farmers including small-scale women farmers. ICTs can be used for the provision of accurate, timely, relevant agricultural information and services to the farmers and this will help in a great way to facilitate an environment for a more productive agricultural sector (Raghuprasad et al., 2012).

According to Lokeswari (2016), the challenges of traditional agriculture can be addressed and overcome significantly by ICT utilization that play an important/vital role in uplifting the livelihoods of the rural smallholder farmers. ICT has helped in the growing demand for new approaches

to farming and other relevant agricultural activities. It has equally helped in empowering the rural people by providing better access to natural resources, improved agricultural technologies, effective production strategies, markets, banking, financial services, etc (Lokeswari, 2016). Effective use of ICT tools by small-scale women farmers depends on the proper farmers' orientation, knowledge, and attitude in using these tools.

There is no doubt that information and communication technology has emerged as a useful and more reliable agricultural information transferring tool to enhance the agricultural developmental process (Sobalaje and Adigun, 2013). Unfortunately, farmers who are the target beneficiaries of agricultural innovations and technologies most especially the small-scale women farmers whose research findings have shown that they constitute the majority of the agricultural labor force and who are ready to embrace this technology if well educated about its usefulness in accessing agricultural information have been hindered by lack of full knowledge on the use of some ICT facilities.

Small-scale women farmers refer to women who are mostly in the rural areas and engage in agricultural production of crops and livestock on a small piece of land ranging from 0.5-5 hectares (half a hectare to 5 hectares) without using advanced and expensive technologies (Shemfe, 2018). The place and role of small-scale women farmers from local to global levels are recognized by the respective governments and international partners as a way to avoid age-old problems like hunger and miserable lives (Anyoha et al., 2018). There is believed currently that small-scale farmers generally can feed the world's undernourished people (Anyoha et al., 2018). This simply means that to achieve a food secured nation, which is the aspiration of every country, will be very easy if small-scale women farmers are well equipped and empowered with all necessary agricultural inputs, equipment and needed information.

According to Anyoha et al. (2018) small-scale farmers who are mostly women, that produce the majority of agricultural products, face various degrees of challenges, including access to adequate information, services, and key-value chains development. Small-scale women farmers which dominate the farming activities in developing countries need to improve farming through acquiring adequate, timely, and useful knowledge and information as regards new agricultural innovations and improved technologies but unfortunately, the reverse is the case. The utilization of information and communication technology by small-scale women farmers in accessing agricultural information will increase their knowledge of production, marketing, sales and other agricultural value chains development valuable information. There are already existing research works on farmers and ICT which include; adoption and utilization of ICT through farmers (Wole-Alo and Oluwabemi, 2020), use of Information and Communication Technologies (ICTs) by

yam farmers in Boluwadur Local Government Area of Osun State, Nigeria (Sobalaje and Adigun, 2013), Assessment of Information and Communication Technology (ICT) utilization among rural women rice farmers in Ayamelum Local Government Area of Anambra State, Nigeria (Okeke et al., 2020), Information and Communication Technology roles in improving women farmers access to agricultural/agribusiness services in Orlu Agricultural Zone of Imo State, Nigeria (Anyoha et al., 2018).

However, available literature has indicated that little or no study has been done on the evaluation of small-scale women farmers' utilization of ICT in accessing agricultural information in Gwagwalada Area Council, Abuja, Nigeria. Providing information on the utilization of information and communication technology by the small-scale women farmers in accessing agricultural information will help agricultural extension agents, policymakers, and other relevant agricultural stakeholders and agencies who have some important agricultural information to know the best method of transferring such information to them. This is because having access to useful agricultural information on time will help the small-scale women farmers in accessing more production resources.

Therefore, having realized the importance of information and communication technologies and their need for effective dissemination of agricultural information, it becomes pertinent to evaluate the small-scale women farmers' utilization of ICTs in accessing agricultural information in Gwagwalada Area Council, Abuja, Nigeria. The main purpose of this research paper is to evaluate the small-scale women farmers' utilization of ICT in accessing agricultural information in Gwagwalada Area Council, Abuja, Nigeria. Specifically, the study:

- i. described the socio-economic characteristics of the small-scale women farmers in the area,
- ii. ascertained ICTs available in the study area, and
- iii. examined the ICTs in use by the respondents.

MATERIALS AND METHOD

The study area is Gwagwalada Area Council, Abuja, Nigeria. Gwagwalada Area Council is one out of the six Area Councils in Abuja Federal Capital Territory. It is the name of the main city in the Local Government Area, which has an area of 1,043 km² and a population of 157,770 according to the 2006 census. It is projected to have a 6.26% growth between 2020 and 2025, the largest increase on the African continent. It has ten political wards which include: Dobi, Gwagwalada Centre, Gwako, Ibwa, Ikwa, Kutunku, Paiko, Staff Quarters, Tungan Maje and Zuba. The population for the research was small-scale women farmers in the study area. A purposive and simple random sampling technique was adopted for sampling while questionnaires were used for

data collection. A total of 100 small-scale women farmers were sampled from five of the political wards which include: Dobi, Ibwa, Paiko, Tungan Maje and Zuba and twenty (20) respondents were randomly selected from each ward for the study. The data were analyzed using descriptive statistics such as frequency tables and percentages.

RESULTS AND DISCUSSION

Socio-Economic Characteristics of the Respondents

The result on the socio-economic characteristics as shown in Table 1 indicates that a greater proportion (35%) of the respondents were between the age of 31-40 years while the remaining 9% were 50 years and above. This result indicates that the respondents were predominantly in their middle ages and within the active workforce. The small-scale women farmers can equally be seen to be in their productive age. It was also observed that a greater proportion (46%) was married while 6% were widowed. Considering their household size, level of education and farming experience, majority (37%) of the respondents had household size of between 4 to 6 members, 37% attained tertiary education and 48% had farming experience of less than 10 years. It was equally noticed that the majority (68%) of the respondents had farm size in hectares of ≤ 5 hectares, 48% practice full time farming and 65% were members of farmers' association or farmers' cooperative societies. Their main means of land acquisition is by rent (41%) while few (2%) had an opportunity to get land allocated by the government. They had their major source of fund for their farming activities as loan from cooperative/farmers groups (49%) while none (0.00%) had ever gotten grant from government or other donor agencies.

The result of this study shows that government policies on cluster farming or forming of farmers association or cooperative in order to access government assistance has started yielding fruits in the study area, as majority of the respondents are members of farmers association or cooperative societies. However, all the efforts of the small-scale women farmers have not yield expected fruits as neither loans were given to them nor easy land access achieved. It calls for concern, if the small-scale women farmers in the Gwagwalada Area Council, Federal Capital Territory cannot get access to land from the government order than purchase and rent and none had ever gotten grant from either government or donor agencies and only few had benefited from government loan allocation at nine and two percent (9% and 2%) respectively. Now what is the fate of other small-scale women farmers in different states of the federation? It is worthy of note that daily information on the news media suggests that small-scale women farmers are being empowered and helped with all the necessary inputs and other assistance to ensure that agricultural productivity is

Table 1. Socio-Economic Characteristics of the Respondents.

Socio-Economic Characteristics	Percentage
Age	
20-30years	34.0
31-40years	35.0
41-50years	22.0
50 years and above	9.0
Marital Status	
Single	39.0
Married	46.0
Divorced	9.0
Widowed	6.0
Household size	
1-3	31.0
4-6	37.0
7 and above	32.0
Level of Education	
No education	26.0
Primary school	21.0
Secondary school	16.0
Tertiary education	37.0
Farming experience (years)	
below 10	48.0
10-15	31.0
16-20	14.0
21-30	5.0
31 and above	1.0
Farm size (ha)	
≤ 5	68.0
6-10	32.0
Farming practice	
Full time farmer	48.0
Farming and civil servant	43.0
Farming and trading	9.0
Member of farmers' association/cooperative society	
I am a member	65.0
I am not a member	35.0
Means of land acquisition	
Purchase the land	26.0
Rented the land	41.0
Using community land	9.0
Inherited the land	22.0
Land allocated by the government	2.0

Table 1. Contd.

Source of fund for your farming activities	
Personal income	39.0
Friends and relatives	3.0
Loan from cooperative/farmers groups	49.0
Grant	0.00
Loan from government	9.0
Total	100

Source: Field Data Analysis, 2021

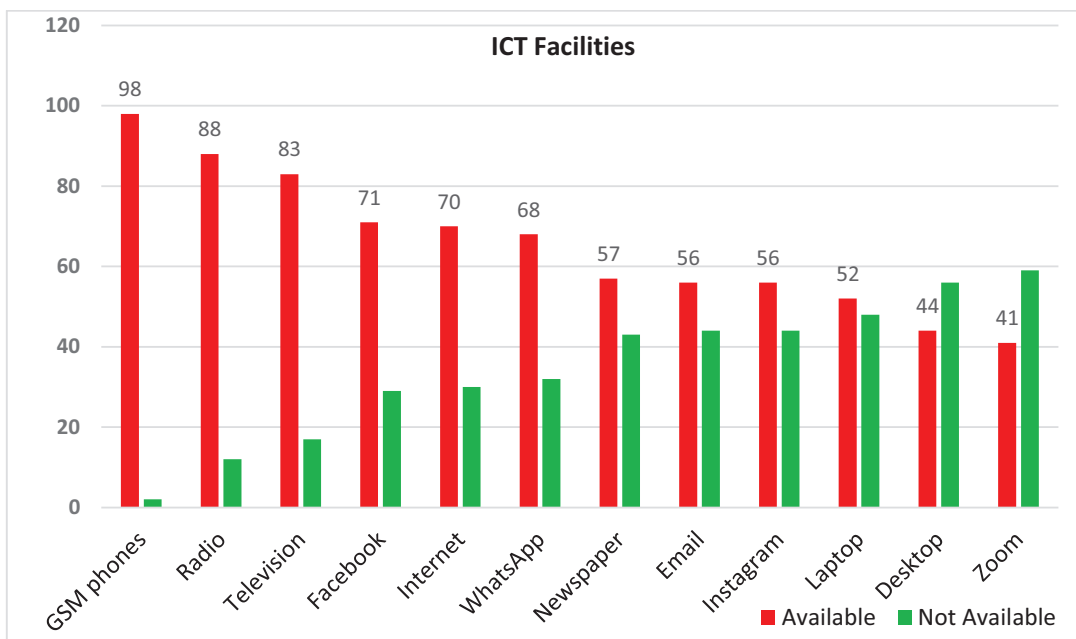


Figure 1. ICTs Facilities available in the study Area
Source: Field Data Analysis, 2021

at its increased but going by the reality the opposite is always the case.

The results of this study also shows that farming is no more perceived as job for the aged and illiterate as was experienced in the past. This is because many young men and woman who are in their active years having undergone a certain level of formal education are now into farming as their full occupation while some combined it with their other sources of livelihood. With this new trend in view, it is necessary to come to terms with and understanding that any new agricultural technology and innovation brought forward will not suffer much setback in terms of its transfer in as much as the appropriate channels are used and some other communication barriers are watched against. The findings on some of the socio-economic characteristics of this study is in agreement with the finding of Okeke et al. (2020) whose

finding indicated that majority 66.7% of the rural women rice farmers were between the ages of 31 and 40 years, 19.6% were within the age range of 20 -30 years while 13.7% were between the age of 41 and 50 years. Their result equally indicated that majority (68.8%) of the rural women rice farmers were married, while 19.7% were single. The finding of this study as well is also in agreement with same Okeke et al. (2020) on the level of education which their results indicated that majority of the rural women rice farmers (82.4%) had formal education while 17.6% had no formal education. The result is also in agreement with the finding of Shemfe (2018) whose finding indicated that a majority (80%) of the respondents had formal education, 51% were married and 59.5% had household size of 4 to 6 members but in contrast with same finding on the majority of the age distribution which indicated 50 years and above 49% and 41

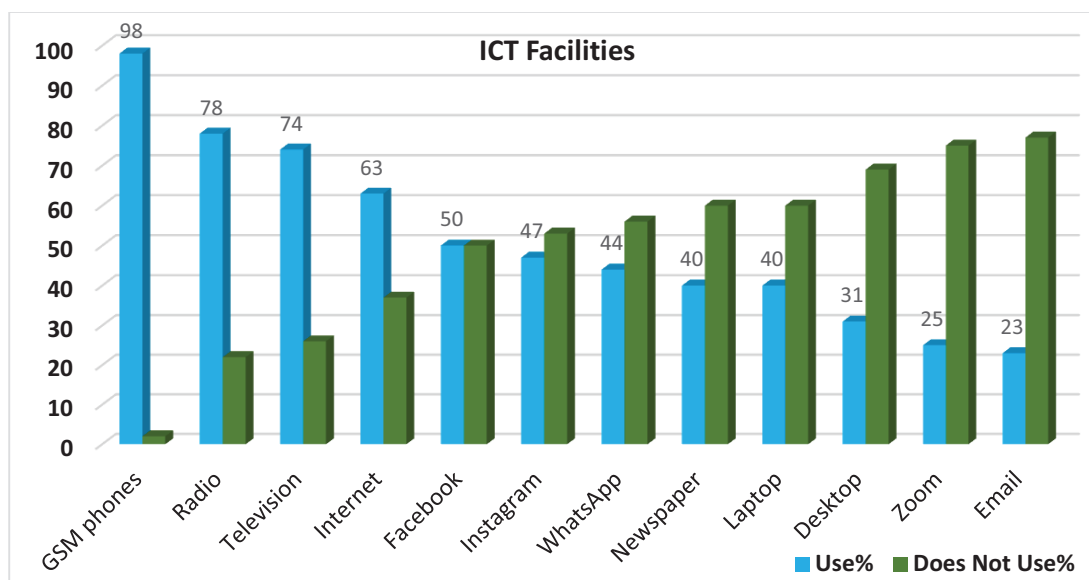


Figure 2. The ICTs in use by the small-scale women farmers
Source: Field Data Analysis, 2021

to 50 years 40%.

ICTs Available in the Study Area

The result on the ICTs available in the study area is shown in Figure 1. The result indicates that GSM phones (98%), radio (88%), television (83%), among others were the major ICTs available in the study area. On the other hand, the majority of the respondents reported limited or unavailability of ICT facilities such as Zoom application (59%), desktop computer (56%) and Laptop (48%) respectively. Going by the new trend where Cyber extension is been advocated for it is very important to make ICT facilities like Zoom application available to small-scale women farmers especially in this era of social distancing due to the effect of the Covid-19 Pandemic. This result is in agreement with the finding of Okeke et al. (2020) whose finding indicated that the majority (98.0%, 96.0%, and 94.1%) of rural women rice farmers in Ayamelum Local Government Area of Anambra State, identified mobile phone, radio, and television as the most available information communication technology tools in the study area.

The ICTs in use by the Small-scale Women Farmers in Accessing Agricultural Information

The result on the ICTs in use by the small-scale women farmers in accessing agricultural information by the respondents is shown in Figure 2. The result shows that the majority of the respondents use GSM phones (98%), radio (78%), and television (74%) respectively while 2%, 22% and 26% do not use the mentioned ICTs. On the other hand, a majority do not use email (56%), Zoom (41%) desktop (44%),

and newspaper (57%) respectively. There will be a need to train the small-scale women farmers in the study areas on the need to embrace other information communication technology facilities especially Zoom and WhatsApp (in terms of WhatsApp video call usage) which can be used to conduct meetings as if the people are meeting physically and obtaining immediate responses to any issues raised.

CONCLUSION AND RECOMMENDATIONS

The research on the evaluation of small-scale women farmers' utilization of ICT in accessing agricultural information in Gwagwalada Area Council, Abuja, Nigeria, therefore, concludes as thus:

1. That going by the results of the socio-economic characteristics, it is imperative to note that farming is no more perceived as a job for the aged and illiterate as was noted in the past. The findings of the study further reveal that more young people at their active age are getting involved in farming activities either partially or completely. These young people also do so with some form of formal education. This development will therefore increase the use of ICT in accessing agricultural information as the farmers can readily take advantage of any new agricultural technology and innovation brought forward. These agricultural technologies and innovations will also not suffer any kind of setback in its usage and transfer as long as the right channels are used at the same time finding suitable ways of bridging other communication barriers.

- The result on the ICTs available in the study area indicated that GSM phones (98%), Radio (88%), television (83%), among others were the major ICTs available in the study area. On the other hand, the majority of the respondents reported limited or unavailability of ICT facilities such as Zoom (59%), desktop (56%), and laptop (48%) respectively. The result also showed that a majority of the respondents use GSM phones (98%), radio (78%), and television (74%) respectively for agricultural information-sourcing while 2%, 22% and 26% do not use the mentioned ICTs. On the other hand, a majority do not make use of email (77%), Zoom (75%) desktop computer (69%) and newspapers (60%).

Recommendations

The study, therefore, recommends:

- That there will be a need to create more awareness by educating the small-scale women farmers in the study area on the need to embrace other information communication technology facilities such as Zoom and WhatsApp video conference calls usage which can be used to conduct meetings, training, and communicate other information at the same time obtaining immediate and quick responses.
- That avenues for using such ICTs calls are created for the small-scale women farmers and importance of its usage be made known to them most especially in this era of Covid-19 pandemic where the rule of social distancing is the order of the day. The extension agents should be encouraged to engage them on the said Zoom meetings and WhatsApp video conference calls where any concern raised inform of question(s) can be addressed immediately.
- There should be training on the use of other ICTs other than GSM phones, radio and television for agricultural information-sourcing for the small-scale women farmers.
- There is also a need to sensitize the small-scale women farmers in the study area to know that laptops and desktops with an internet connection can do the same work their GSM phones can do.
- Also, grants, government loans, and land access are to be made available to the small-scale women farmers in the study area, FCT as a whole, and Nigeria in general.

Conflict of Interests

The authors declare no conflict of interest.

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