



## Influence of Mass Media Promoted Agricultural Programmes on Arable Crop Production in Ezza North Local Government Area of Ebonyi State, Nigeria

<sup>1</sup>Nwibo, S. U., <sup>1</sup>Mbam, B. N., <sup>1</sup>Odoh, N. E., <sup>1</sup>Egwu, P. N., <sup>2</sup>Uloh, F. U. and <sup>1</sup>Oken, D. E.

<sup>1</sup>Department of Agricultural Economics, Management and Extension;

<sup>2</sup>Department of Business Management, Ebonyi State University, Abakaliki

Corresponding Author's email: [sunwibo@gmail.com](mailto:sunwibo@gmail.com)

### Abstract

In the past, much of extension worker's activities were done through face-to-face contacts – a tedious and time consuming approach. There is therefore, need to shift from this traditional method of reaching farmers to a more effective, faster and wider means to cover a wide spectrum of clientele. Hence, the study assessed the influence of mass media promoted agricultural programmes on arable crop production in Ezza North L.G.A of Ebonyi State, Nigeria. Multi-stage sampling technique was adopted in the selection of 120 respondents using structured questionnaire. Data collected using primary source were analysed using both descriptive and inferential statistics. The results showed that majority (72%) of the farmers were males with a mean age of 41 years, and a mean annual farm income of N380, 000. The major mass media available in the area were radio (98%) and television (92%). The most mass media promoted agricultural programmes in the area were One-Man-One hectare (97%), Covid-19 support loan (90%), and AGSMEIS loan (82%). With the coefficient of multiple determinations ( $R^2$ ) of 0.867, it was observed that mass media promoted agricultural programmes have significant influence on arable crop production in the study area. However, high cost of devices, inadequate capital, lack ICT skills, peer group influence, language barrier, cultural barrier, poor infrastructural development, policy inconsistency, time of programme broadcast, and limited coverage of media waves were identified as the major constraints in the use of mass media in enhancing arable crop production in the study area. The study recommended for improved agricultural extension services delivery to farmers on the effective utilization of mass media for agricultural production.

**Keywords:** Mass media, programme, agriculture, arable crops, farmers

### Introduction

Mass media is a medium through which written, broadcast, or spoken information reach wide audience. It further includes diverse array of media technologies through which large audience can be reached. The technologies through which this communication takes place include a variety of outlets which includes television, radio, advertising, movies, the internet, newspapers, magazines, and so forth (Kumar *et al.*, 2017; Manohar, 2011). In modern agriculture, mass media plays significant role in the transfer of innovations to the farmers (Bamka, 2000). Through mass media, communities and individuals are bombarded constantly with messages from a multitude of sources including TV, billboards, and magazines, to name a few. These messages promote not only products, but agricultural production, and a sense of what is important. Mass media methods in agricultural information dissemination generally, are useful in reaching a wide audience at a very fast rate (Ariyo *et al.*,

2013). They are useful as sources of agricultural information to farmers and as well constitute methods of notifying farmers of new developments and emergencies. They could equally be important in stimulating farmers' interest in new ideas and practices (Oba *et al.* 2020). Mass media are important in providing information for enabling the rural community to make informed decision regarding their farming activities, especially in the rural areas of developing countries (Lwoga, 2010). Information, as we know is the key for success in the operation and management process of the agriculture activities. To a large extent, mass media serve as a veritable instrument for information dissemination in agriculture (Ariyo *et al.* 2013).

In developing countries, latest mass media have made their place for backing up agricultural sector through extension activities (Qamar, 2016). Mass media have the capacity to uplift the knowledge and impact on

human behaviour (Nazari and Hassan, 2011). The potency of modern electronic technology can be exploited for information to farming community (Guenthner and Swan, 2011). Ekenta *et al.* (2019) citing Yawson *et al.* (2010) stated that creation of awareness is the first step towards the adoption process. Mass media (electronic and print media) are playing a very important role in creating awareness about new agricultural technologies among farmers. Mass media are spreading agricultural technologies to the farmers at a faster rate than personal contacts (Khushk and Memon, 2014). Modern agriculture is characterized among other things by the salient role of communication as factor of change and progress. Electronic media transmit the agriculture innovation to the farming community. Undoubtedly, there have been a rapid quantitative diffusion of mass media (Abubakar *et al.*, 2012; Onuekwusi and Gideon, 2012). Mass media has evolved as an effective form of communication in the contemporary world which has been widely acknowledged to have catalytic impacts on the process of development. Agriculture constitutes a major chunk of most countries economy but unfortunately in Nigeria, this major sector has been severely neglected by the successive regimes in power resulting in low productivity and failure to achieve required growth rate (Bukhari, 2016). The stagnation of agricultural sector is attributed to inadequate investments in research and development along with lack of agricultural education and extension system (Kumar, *et al.* 2017). Thus, to reinvigorate agricultural sector government needs to formulate a holistic policy focusing mainly on capacity building of farmers by improving access to inputs and enhancing their skills through training, extension services, and effective e-communication of agricultural knowledge (Muhammad *et al.*, 2012).

In spite of the presence of extension workers for information dissemination to arable crop farmers in Ebonyi State, arable crop outputs seem not to have shown encouraging growth rate. Large proportion of the outputs of arable crop such as cassava, maize, yam, vegetables like cucumber, garden egg and water melon are brought in from the neighbouring States to complement local production. On the other hand, the past efforts of the State government in ensuring the availability of information on new innovations on yam and cassava at a subsidized rate to farmers in the state has not yielded the intended objectives, given the present low productivity among arable crop farmers in the state (USAID, 2009). In this regard, information dissemination is another key factor designed to improve arable crop production. However, for the information to be adequately and timely disseminated, mass media will play a key role. This is because, in the past, much of the activities of extension workers were done through the face-to-face extension contacts, a tedious and time-consuming approach.

In Ebonyi State, Nigeria, there are various agricultural programmes that were being promoted using mass media. These agricultural programmes include One-

man-one hectare, Anchor Borrowers (ABs), Covid-19 support loan among others. These programmes were widely disseminated using the State and Federal radio and Television stations due to their wide State coverage and its ability to provide information with recommendation and analysis of experts. For instance, if the farmers are informed about all these programmes, they can make reasonable decision that will lead to increased output. However, studies on mass media and agricultural production abound, but most of them were not of the Southeast, Nigeria. Hence, a study to bridge the gap and create knowledge on the influence of mass media promoted agricultural programmes on arable crop production in Ezza North Local Government Area of Ebonyi State. In justification of the gap in knowledge, Ani *et al.* (2017) worked on utilization of mass media among farmers in Ikwere Local Government Area of Rivers State, Nigeria, with the result that radio, television and mobile phones were the utilized mass media in the study area; Saleh *et al.* (2018) worked on utilization of mass media in agricultural extension service delivery in Nigeria. In their findings they affirmed that rural farmers have challenges in the use of mobile phones such as inability to have access to calling cards regularly, fluctuation in network receptions and constant energy to charge, still mass media has a positive impact. Again, Ariyo *et al.* (2013) worked on assessment of the role of mass media in the dissemination of agricultural technologies among farmers in Kaduna North Local Government Area of Kaduna State, Nigeria. Their findings revealed that the use of mass media was effective in the dissemination of agricultural technologies in the study area. To effectively address the problem, the study described the socioeconomic characteristics of the farmers; identified the available mass media and their agricultural programmes in the study area; determined the influence of the mass media agricultural programmes on the production of arable crops; analysed the factors influencing the use of mass media in enhancing arable crops production in the study area; and analysed the constraints to effective use of mass media in enhancing arable crop production in the study area.

## **Methodology**

### **Study Area**

The study was conducted in Ezza North Local Government Area (LGA) of Ebonyi State. It is made up of eight communities which include; Umuezeokoha, Umuezeoka, Umuoghara, Orizo, Amuda, Ebiaji, Nkomoro, and Ekka. Its headquarters is located at Ebiaji which is 13km away from the State capital. Ezza North LGA has a land area of 517km<sup>2</sup> and a total population of 146,149 people (NPC, 2006). Geographically, the Area lies within latitude 4°N and longitude 8°E of Ebonyi State. It is bounded in the north by Ebonyi LGA, in the south by Ezza South LGA, in the east by Abakaliki LGA and in the west by Ishielu LGA. The mean temperature of the area is between 27°C and 28°C and the prominent climatic seasons are rainy season, lasting from April to October and dry season, lasting from November to March.

The vegetation of the area is the derived savannah type and the topography of the area is characterized mainly by level land except for some part of the area which chains of rolling hills and valleys define the landscape. Farming constitutes the major occupation of the people in the area. The major crops grown in the area include yam, cassava, rice, vegetable, maize, oil palm, and sweet potatoes. Others include banana, Telfaria, pepper, soybeans, citrus, plantain and various tree crops. They also engage in livestock and rearing of animals such as sheep and goat, poultry, cattle and swine. The LGA is widely covered by high speed internet facilities, Ebonyi State and Federal Radio and Television stations where major agricultural programme information is being disseminated.

### Sampling Technique

Multistage sampling technique was used in the selection of respondents. Specifically, stage one involved purposive selection of five communities of Umuezeokoha, Umuezeoka, Umuoghara, Orizo, and Amuda out of the eight communities in the area. The choice of purposive sampling at this stage was based on the level of farming activities in the area. Stage two involved the random selection of two villages from the purposively selected five communities. The last stage was the random selection of twelve arable crop farmers from each of the villages. Hence, the sample size of one hundred and twenty arable crop farmers was used to realise the objectives of the study.

### Data Collection

Primary data were used for the study. Primary data were collected with the use of structured questionnaire which was complemented with interview schedule. However, data were collected on the socioeconomic characteristics of the arable crop farmers; the agricultural programmes promoted via mass media (one-man-one hectare, anchor borrowers, Covid-19 support loan, AGSMEIS loan, and Buhari young farmers); the type of arable crops produced in the area; and the constraints mass media promoted agricultural programmes have in enhancing agricultural production.

### Data Analysis

Data obtained were analysed using descriptive and inferential tools. Specifically, descriptive tools involving the use of frequency counts, means, and percentages were used. Inferential tools involving the use multinomial regression, ordinary least square regression, and principal factor analysis were employed.

### Multinomial Regression Model

$$Y = \beta_0 + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 + \beta_4 x_4 + \beta_5 x_5 + et \dots\dots(1)$$

Where,

Y = Quantity of arable crops produced (kg) (Qty of

rice = 1, Qty of cassava = 2, Qty of yam = 3)

X<sub>1</sub> = One-Man-One Hectare (Size of Hectare)

X<sub>2</sub> = Anchor Borrower Scheme (Amount borrowed)

X<sub>3</sub> = Covid-19 Agricultural Support Loan (Amount

supported)

X<sub>4</sub> = AGSMEIS Loan (Amount obtained)

X<sub>5</sub> = Buhari Young Farmers Network (Yes = 1, No = 0)

β<sub>0</sub> = Constant

β<sub>1</sub> – β<sub>5</sub> = Parameters

et = Error term

## Results and Discussion

### Socio-economic Characteristics of the Farmers

The result of the analysis on the socioeconomic characteristics of the farmers as shown in Table 1 shows that majority (72%) of the farmers were male, while 28% were female. These farmers are within the mean age of 41 years. This agrees with the findings of Esiobu *et al.* (2014) who reported that farming especially in sub-Saharan Africa is turning out to be male activity. It however, refutes Kisaka- Iwayo (2012) as cited by Maremera (2014) that in most African rural settings, the younger generation do migrate to the urban areas in search of white collar jobs, while farming is left in the hands of older generation. The educational status of the farmers revealed that about 82% of the farmers had trainings in formal educational institutions which no doubt increases their literacy levels. However, specific analysis shows that about 43% of the farmers had secondary education, 27% had primary education, and 18% had no formal education while 12% had tertiary education. This finding supports Moyib *et al.* (2013) and Girei *et al.* (2014) that higher level of education determines the quality of skills of farmers, their allocative abilities, efficiency and how well informed they are of the innovations and technologies around them. It was further observed that majority (63%) of the arable crop farmers had household size of 6-10 persons and a mean household size of 7 persons. This implies that arable crop farmers in the study area have large household size suitable for complementing labour supply. This finding agrees with the result of Onubuogu *et al.* (2013) and Esiobu *et al.* (2014) who reported that large household size complement hired labour to enhance production and reduce the cost of hired labour. Meanwhile, arable crop farmers in the area cultivate less than one hectare as shown by the mean farm size of 0.97 hectares. This could be attributed to the area's land tenure system and increasing population that is giving pressure to the land. Membership of cooperative society affords farmers the opportunity of sharing information on modern production techniques, purchasing inputs in bulk as well as exchanging labour. From the analysis, it was observed that majority (73%) of the arable crop farmers do not belong to any form of cooperative society, as about 27% of the farmers belong to cooperative society. The farmers' annual income reveals that about 52% of the farmers had an annual income of between N400,001 - N600,000 while about 11% had less than or equal to N200,000. Their mean annual farm income was N380,000 which was little above the N30,000 national minimum wage per month in spite of large families which they support. The marginal propensity to consume the produce of these farmers far exceeds their propensity to save, making the

generation of financial capital almost impossible. This further perpetuates the vicious cycle of poverty that had engulfed most of the farm families. Experience in farming has been hypothesized to enhance output performance. From the analysis it was observed that majority (63.33%) of the farmers' had 11-20 years in arable crop production while 7% had less than 10 years. This finding supports Oluwatayo *et al.* (2008), Ogundari and Brummer (2010), and Amos (2013) who reported that experienced farmers tend to be more efficient, have better knowledge of climatic conditions, better knowledge of efficient allocation of resources and market situation and are thus, expected to run a more efficient and profitable enterprise.

#### ***Available Mass Media in the Area***

The available mass media for disseminating agricultural programmes in the study area were analyzed in this section and the result obtained is presented in Table 2. Result of the analysis revealed that the major mass media for disseminating agricultural programmes was radio (98 %). This result agrees with the findings of Oba *et al.* (2020) and Ogunbameru (2011), who expressed that radio cuts across the literacy barriers required in books, newspapers, journals, bulletins, pamphlets etc. Radio in essence often does not require higher educational qualification or back-ground to be effective. Even the pastoralists who are often physically inaccessible (to many other mass media, including electronic media) and who live in low population densities can be mobilized at the same time with radio anywhere without necessarily interfering with their daily activities at homes or in fields. The result equally showed that about 92%, 82%, 68% and 42% of the respondents got their agricultural information through television, telephone, newspaper, and internet respectively. This also agrees with Nwachukwu and Odoemelam (2014) who reported television viewing in developing countries is growing rapidly and has great scope for timely research and action. Meanwhile, the use of pamphlets/handbills (33%), E-mail (19%), and bill boards (15%) were found not effective in dissemination agricultural information. This finding thus, reaffirms the finding of Samah *et al.* (2011) who reported that most farming communities are still very reluctant to use the advance technology such as internet to receive agriculture information. Therefore, most farmers in rural communities do not have skills or expertise in that use of advance technologies, and as such the use portable radio becomes the most readily means of disseminating agricultural information.

#### ***Mass Media Promoted Agricultural Programmes***

The level of promotion accorded to agricultural programme is pivotal to its adoption. In Ezza North Local Government Area, various agricultural programmes were disseminated to farmers using mass media. Analysis of the programmes as shown in Table 3 shows that the most agricultural programme disseminated through mass media in the area was one-man-one hectare of Ebonyi State Government accounting for 97% of the farmers' responses. This was

followed by Covid-19 support loan (90%) and AGSMEIS loan (82%). Others were Anchor Borrowers and Buhari young farmers which account for 77% and 58% of the respondent respectively. This implies that mass media serves a good tool in disseminating agricultural programmes; it combines both audio and visual impact and is very suitable for the dissemination of agricultural programmes. It is more useful in teaching how to do a specific job. Nazari and Hassan (2011) in their study revealed that mass media offers effective channels for communicating agricultural messages, which can increase knowledge and influence behaviour of audience members within short time and can reach a large number of people. However, Nyamba and Mlozi (2012) in their study revealed that mass media has been effective in disseminating agricultural programmes. The findings agreed with that of Shaikh *et al.* (2020) who posited that mass media methods in agricultural programmes dissemination generally, are useful in reaching a wide audience at a very fast rate. They are useful as sources of agricultural information to farmers and as well constitute methods of notifying farmers of new developments and emergencies. They could equally be important in stimulating farmers' interest in new ideas and practices. Mass media are important in providing information for enabling the rural community to make informed decision regarding their farming activities, especially in the rural areas of developing countries (Lwoga, 2010).

#### ***Influence of the Mass Media Agricultural programmes on Arable Crop Production***

The multinomial Logit (MNL) regression analysis was employed to determine the influence of the mass media promoted agricultural programmes on the production of arable crops using cassava and yam as proxy for other arable crops produced by the farmers. The result of the analysis is presented in Table 4. From the analysis, it was observed that the LR chi-square of 109.25 was highly significant at 1% level of significance suggesting that the model has a strong explanatory power. However, individual analysis of the mass media promoted agricultural programmes revealed that the coefficient of One-Man-One Hectare agricultural programme ( $X_1$ ) had positive and significant relationship with cassava output. This situation indicates that the more the farmers receive support from government the more exposed they are to new techniques for cassava production. This is *in tandem* with Ansah and Tetteh (2016) who found out that government support like soft loan and grant is an incentive to produce more. The co-efficient of Anchor Borrower Scheme ( $X_2$ ) was positively signed and significantly related with cassava and yam production output. This implies that there is positive relationship existing between the anchor borrower scheme and the production of cassava and yam. This agrees with the findings of Nirsal Micro-Finance Bank (NMFB) (2020) that reported that increased government financial support to the farmers will bring about increase in production and increase in the country's GDP. Similarly, the coefficient of Covid-19 Agricultural Support Loan

(X<sub>3</sub>) was positive and significant to cassava and yam production. This therefore suggests that adequate agricultural support loan can motivate the farmers to invest more. In the same vein, AGSMEIS Loan (X<sub>4</sub>) was also positively and significantly related with cassava and yam production. This implies that as the amount of loan given to farmers increases, it makes the farmers more productive. The coefficient of Buhari Young Farmers (X<sub>5</sub>) shows a positive relationship with cassava and yam production. This implies that a unit increase in the targeted media agricultural programmes will bring about increase in arable crops production in the area. This supports the findings of Obasi (2013) that showed that availability of loan and grant was directly related with arable crop production in Kwara State.

### ***Constraints to Effective Use of Mass Media in Enhancing Arable Crop Production***

Farmers are clearly not a homogenous group, and understanding the specific factors that impede their use of mass media in arable crop production is the first step towards better targeting of extension programs and advisory services that facilitate information sharing (Table 5). However, a majority of published literature that examines the factors that affect farmers' information search behaviours, and the factors that influence farmers' use of different information sources, comes from studies in developed countries. In Ezza North LGA, the factors that influence the use of mass media in enhancing arable crop production were extracted using Principal Component Factor analysis. The factors were categorised into three - financial, individual and institutional factors. The identified financial constraints are the high cost of devices (0.541) and inadequate capital (0.823). This tends to agree with the report of Mgbakor *et al.* (2013) who reported that arable crop farmers lack economic capability to access and use relevant agricultural programmes. Another implication to this is that inadequate credit and high cost of service affects arable crop farmers' decision to adopt the use of mass media. This is in line with the report of Okwu and Daudu (2011) that farmers tend to adopt innovations more if they are not faced with barriers such as finance. The identified individual constraints to effective use of mass media in arable crop production are inadequate skills (0.617), peer group influence (0.714), language barrier (0.669), and cultural barrier (0.883). This is in line with the finding of Akinnusi *et al.* (2018) who reported that lack of skill development by the rural farmers has greatly impaired their ability to seek new information needed for modern agricultural production. Similarly, Shaikh *et al.* (2020) also supported this finding when he reported that multilingual usage and translation into many native languages is necessary because the end users do not master the source language due to low level of education. The report of Oladele (2015) also supports the finding of this by indicating that a multilingual farm broadcast covers a prevalent location language and the other languages of those involved in farming activities within the coverage of the broadcast. This is a very important factor because majority of farmers' listeners

do not only find it difficult to understand the language used in transmission, but they prefer receiving information in a particular language which unfortunately is not the one used by the mass media. It has been hypothesized that infrastructural development such as good rural roads, steady and government sponsored internet network, steady power supply and making time of broadcast of programmes to be suitable with the farmers is key to effective utilization of agricultural information. The identified institutional constraints were poor infrastructural development (0.865), policy inconsistency (0.542), time of broadcast of programme (0.732), and limited coverage of farmers' needs (0.606). This supports the findings of Okoh (2016) who inferred that poor infrastructural development and policy inconsistency were the major factors hindering arable crop production in Benue State.

### **Conclusion**

With the Likelihood ratio statistics as indicated by the chi square statistics that was highly significant (P<0.01), it concluded that mass media agricultural programmes have significant influence on arable crop production in the Ezza North Local Government Area of Ebonyi State, Nigeria. Based on the finding, the study recommended for improved agricultural extension services delivery to farmers on the effective utilization of mass media for agricultural production. Also such programs should be broadcasted in local languages for effective internalization of the information which they carry. There should be formation of mass media clubs for the farmers to help in fostering information assimilation among them.

### **References**

- Abubakar, B. Z., Ango, A. K., and Buhari, U. (2012). The roles of mass media in disseminating agricultural information to farmers in Birnin Kebbi local government area of Kebbi State: A Case Study of State Fadama II Development Project. *Journal of Agricultural Extension*, 13(2): 42-54.
- Akinnusi, F. A., Sodiya, C., and Adamu, C. (2018). Determinants of Farm Hygiene Practices towards Preventing and Controlling Poultry Diseases among Poultry Farmers in Lagos State, Nigeria. *Journal of Agricultural Extension*, 22(2): 13-27.
- Amos, T. T. (2013). Analysis of Backyard Poultry Production in Ondo State, Nigeria. *International Journal of Poultry Science*, 5(3): 247-250.
- Ani, A.O., Umunakwe, P.C., Ejiogu-Okereke, E. N. Nwakwasi, R.N. and Aja, A.O, (2015). Utilization of Mass Media among Farmers in Ikwere Local Government Area of Rivers State, Nigeria. *Journal of Agriculture and Veterinary Science (IOSR-JAVS)*, 8(7): 41-47.
- Ansah, I.G.K and Tetteh, B.K.D, (2016). Determinants of Yam Postharvest Management in the Zabzugu District of Northern Ghana. *Advances in Agriculture*, 16: 1-9.
- Ariyo, O.C, Ariyo, M.O, Okelola, O.E, Aasa, O.S, Awotide, O.G, Aaron, A.J, and Oni, O.B. (2013). Assessment of the Role of Mass Media in the

- Dissemination of Agricultural Technologies among Farmers in Kaduna North Local Government Area of Kaduna State, Nigeria. *Journal of Biology, Agriculture and Healthcare*, 3(6): 19–28.
- Bamka, W.J. (2000). Using the Internet as a Farm-Marketing Tool. *Journal of Extension*, 38(2).
- Bukhari, A. (2016). *Improving Profile of Agriculture Sector*. Dawn, Business and Finance Weekly, March 28, 2016.
- Ekenta, C. M., Ogbonyomi, A. A., Kadiri, M. and Ogunremi, J. (2019). Access and Utilization of Information and Communication Technology (ICT) Devices among Small Scale Farmers in Kabba/Bunu Local Government Area, Kogi State – Nigeria. *PAT Journal*, 15 (1): 39-46.
- Esiobu, N. S. and Onubuogu, G. C. (2014). Determinant of Income from Pineapple Production in Imo State, Nigeria: An Econometric Model Approach. *Journal of Economics and Sustainable Development*, 5(22): 122-132.
- Girei, A. A., Dire, B., Yuguda, R. M. and Salihu, M. (2014). Analysis of Productivity and Technical Efficiency of Cassava Production in Ardo-Kola and Gassol Local Government Areas of Taraba State, Nigeria. *Agriculture, Forestry and Fisheries*. 3(1): 1-5.
- Guenther, J. F. and Swan, B. G. (2011). Extension Learners' Use of Electronic Technology. *Journal of Extension*, 49(1).
- Khushk A.M. and Memon A, (2014). Impact of Devolution on Farm Extension System. *Daily Dawn*. November 1–7, 2014. P.3.
- Kisaka-Lwayo, M. (2012). *Risk Preferences and Consumption Decisions in Organic Production: The Case of Kwazulu-Natal and Eastern Cape Provinces of South Africa*. University of Fort Hare.
- Kumar, K. S., Akshaya, and Vijayakumar, K. P. (2017). Role of mass media in disseminating agricultural information to farmers of Nedumangad Bloc in Kerala. *International Journal of Information Movement*, 2(8): 44-51.
- Lwoga, E. T. (2010). *Bridging the Agricultural Knowledge and Information Divide: The Case of Selected Telecenter and Rural Radio in Tanzania*. 43: 1-14.
- Manohar, I. E. (2011). The Rural Press as Vital Component of the Rural Information System, In: Nwosu, I.E. (ed). *Mass Communication and National Development*. Frontier Publishers Limited, Aba, Abia State Nigeria.
- Maremera, G. (2014). *Assessment of Vegetable Postharvest Losses among Smallholder Farmers in Umbumbulu Area of Kwazulu-Natal Province, South Africa*. School of Agricultural, Earth and Environmental Sciences, College of Agriculture, Engineering & Science, University of KwaZulu-Natal, Pietermaritzburg.
- Mgbakor, M., Iyobor, O. and Uzendu .P. O. (2013). Contributions of Mass Media to the Development of Agricultural Extension in Ika North East L.G.A of Delta State, Nigeria. *Academic Journal of Plant Sciences*, 6(3): 127–133.
- Moyib, F. R., Akinwumi, J. A. and Okoruwa, V. (2013). Resource-Use Efficiency of Female-cassava Farmers in Rain- Forest Zone of Ogun State. *Journal of Agriculture and Biodiversity Research*, 2(2): 17-23.
- Muhammad, S. Ashraf, I. and Siddiqui, B. N. (2012). Effectiveness of Different Communication Methods/Media used by Novartis Pesticide Company in tehsil Arifwala. *International Journal of Agricultural Biology*, 4:335-337.
- Nazari, M. R. and Hassan, M. S. B. H. (2011). The Role of Television in the Enhancement of Farmers' Agricultural Knowledge. *Africa Journal of Agriculture Research*, 6(4): 931–936.
- NMFB (2020). Nirsal Micro Finance Bank. *Yearly Annual Report*.
- NPC (2006). National Population Commission, 2006 *Official Census Figure of Ezza South Local Government Area of Ebonyi State, Nigeria*.
- Nwachukwu, I. and Odoemelam, L.C. (2004). *Effectiveness of television farm broadcast in the transfer of technology to farmers in Abia State*. 9<sup>th</sup> Annual Conference of Agricultural Extension Society of Nigeria [AESON], Ile-Ife, Nigeria. P. 3.
- Nyamba, S. Y. and Mlozi, M. R. S. (2012). Factors influencing the use of mobile phones in communicating agricultural information: A Case of Kilolo District, Iringa, Tanzania. *International Journal of Information and Communication Technology*, 2(7): 2223–4985.
- Oba, A. L., Imran, T.Z., and Abdul J. R. (2020). Assessing the Effectiveness of Communication Channels for Promotion of Agricultural Policy among Rural Farmers in Nigeria. *Journal of Global Business and Social Entrepreneurship (GBSE)*, 6(17): 39-54
- Obasi, P.C. (2013). Farm Size Productivity Relationship among Arable Crops Farmers in Imo State, Nigeria. *International Journal Agriculture and Rural Development*, 9: 91-99.
- Ogundari, K. and Brümmer, B. (2010). *Estimating Technical Efficiency, Input substitution and complementary effects using Output Distance Function: A study of Cassava production in Nigeria*. Institute of Food Economics and Consumption Studies, University of Kiel, Germany Dept. of Agricultural Economics & Rural Development, University of Göttingen, Germany.
- Ogunbameru, B. O. (2011). *Practical Agricultural Communication*. Graphic Publishers, Nigeria. Pp. 13—14.
- Okoh, A. I. (2016). *Pathways to a Green economy in post-Paris Agreement Africa*. Green Economics Institut Publishing House the Oxford University, Oxford.
- Okwu, O.J. and S. Daudu. (2011). Extension communication channels' usage and preference by farmers in Benue State, Nigeria. *Journal of Agricultural Extension & Rural Development*, 3(5): 88-94.
- Oladele O.I. (2015). Learning Enhancement Factors among Farmers in Mezam Division of North West

- Province of Cameroon. *Australian Journal of Adult Learning*, 45(2): 223-237.
- Oluwatayo, I. B., Sekumade, A. B., and Adesoji, S. A. (2008). Resource Use Efficiency of Maize Farmers in Rural Nigeria: Evidence From Ekiti State. *World Journal of Agriculture Sciences*, 4(1):12-21.
- Onubuogu, G. C., Chidebelu, S, A. N. D. and Eboh, E. C. (2013). Enterprise Type, Size and Allocative Efficiency of Broiler Production in Imo State, Nigeria. *International Journal of Applied Research and Technology*, 2(6): 10 – 19.
- Onuekwusi, T., and Gideon, L. A (2012). *Determinants of productivity level among rice farmers in Ogun State, Nigeria*. Proceedings of Eighth African Crop Science Conference held between 27<sup>th</sup> – 31<sup>st</sup> October 2012 at El-Minia, Egypt. Pp. 1339-1344.
- Qamar, K. (2016). Agricultural extension in Asia and Pacific: Time to revisit and reform. In: Sharama, V. P. (ed.), *Enhancement of Extension System in Agriculture*. Asian Productivity Organisation (Report of the APOSem. Enhancement of Ext. Systems in Agric. held in Pakistan, 2003. Pp. 15-20.
- Samah, B.A., Shaffril, H.A.M., Hassan, M.A., and D'Silva, J.L. (2011). Can technology acceptance model be applied on the rural setting: the case of village development and security committee in Malaysia. *Journal of Social Sciences*, 7: 113-119.
- Saleh R. A., Burabe, I. B., Mustapha, S. B. and Nuhu, H. S. (2018). Utilization of Mass Media in Agricultural Extension Service Delivery in Nigeria: A Review. *International Journal of Scientific Studies*, 6(1): 43-52.
- Shaikh, S. S., Hassan, A., Forooqui, Y. S. (2020). Role of Mass Media in Dissemination of Agricultural Information among Farmers of Hyderabad, Sindh - Pakistan. *Global Economics Review*, 5(3): 88-96.
- USAID (2009). *Pakistan's Food and Agriculture System*. Rome, Italy.
- Yawson, D.O., Armah, F. A., Afrifa, E.A., Dadzie, S.K.N. (2010). Ghana's Fertilizer Subsidy Policy: Early Field Lessons from Farmers in the Central Region. *Journal of Sustainable Development in Africa*, 12(3): 191-203.

**Table 1: Percentage Distribution of the Farmers according to their Socio-economic Characteristics**

| Variables                        | Frequency (N=120) | Percentage (%) | Mean ( ) |
|----------------------------------|-------------------|----------------|----------|
| <b>Sex</b>                       |                   |                |          |
| Male                             | 86                | 71.67          |          |
| Female                           | 34                | 28.33          |          |
| <b>Age</b>                       |                   |                |          |
| ≤40                              | 38                | 31.67          |          |
| 41-50                            | 66                | 55.00          |          |
| Above 50                         | 16                | 13.33          | 41.34    |
| <b>Marital Status</b>            |                   |                |          |
| Single                           | 16                | 13.33          |          |
| Married                          | 76                | 63.33          |          |
| Divorce                          | 4                 | 3.33           |          |
| Separated                        | 6                 | 5.00           |          |
| Widowed                          | 18                | 15.00          |          |
| <b>Educational level</b>         |                   |                |          |
| No formal education              | 22                | 18.33          |          |
| Primary education                | 32                | 26.67          |          |
| Secondary education              | 52                | 43.33          |          |
| Tertiary education               | 14                | 11.67          | 10.15    |
| <b>Household size</b>            |                   |                |          |
| 1-5                              | 35                | 29.17          |          |
| 6-10                             | 76                | 63.33          | 7.00     |
| Above 10                         | 9                 | 7.50           |          |
| <b>Farm size</b>                 |                   |                |          |
| ≤2                               | 82                | 68.33          |          |
| Above 2                          | 38                | 31.67          | 0.97     |
| <b>Membership of cooperative</b> |                   |                |          |
| Member                           | 32                | 26.67          |          |
| Non member                       | 88                | 73.33          |          |
| <b>Annual income</b>             |                   |                |          |
| ≤200,000                         | 13                | 10.83          |          |
| 200,001-400,000                  | 26                | 21.67          |          |
| 400,001-600,000                  | 62                | 51.67          |          |
| Above 600,000                    | 19                | 15.83          | 380,000  |
| <b>Farming experience</b>        |                   |                |          |
| ≤10                              | 8                 | 6.67           |          |
| 11-20                            | 76                | 63.33          |          |
| 21-30                            | 26                | 21.67          |          |
| Above 30                         | 10                | 8.33           | 8.61     |

Source: Field Survey, 2021

**Table 2: Distribution of Respondents according to Available Mass Media in the Area**

| Mass media          | Frequency<br>(N=120)* | Percentages (%) |
|---------------------|-----------------------|-----------------|
| Radio               | 118                   | 98.33           |
| Television          | 110                   | 91.67           |
| Mobile phone        | 98                    | 81.67           |
| E-mail              | 23                    | 19.17           |
| Newspaper           | 82                    | 68.33           |
| Internet            | 50                    | 41.67           |
| Pamphlets/handbills | 40                    | 33.33           |
| Poster              | 47                    | 39.17           |
| Bill boards         | 18                    | 15.00           |

Source: Field Survey, 2021

\*Multiple Responses Recorded

**Table 3: Agricultural Programmes Disseminated through Mass Media**

| Agricultural programmes | Frequency<br>(N=120)* | Percentages (%) |
|-------------------------|-----------------------|-----------------|
| One-Man-One Hectare     | 116                   | 96.67           |
| Anchor Borrowers        | 92                    | 76.67           |
| Covid 19 Support Loan   | 108                   | 90.00           |
| AGSMEIS Loan            | 99                    | 82.50           |
| Buhari Young Farmers    | 70                    | 58.33           |

Source: Field survey, 2021

\*Multiple Responses Recorded

**Table 4: Multinomial Logit Regression on Influence of the Mass Media Promoted Agricultural programmes on Arable Crop Production**

| Variables                          | Selected arable crops |                            |
|------------------------------------|-----------------------|----------------------------|
|                                    | Cassava               | Yam                        |
| Constant                           | 0.054(2.949)**        | 0.315(3.994)***            |
| One-Man-One Hectare                | 0.812 (2.336)**       | 0.011(0.549) <sup>NS</sup> |
| Anchor Borrower Scheme             | 0.787(3.875)***       | 0.001 (2.608)**            |
| Covid 19 Agricultural Support Loan | 0.014(1.786)*         | 0.005(3.207)***            |
| AGSMEIS Loan                       | 0.485(2.370)**        | 0.741(3.341)***            |
| Buhari Young Farmers               | -0.478 (8.813)*       | 0.443(0.084) <sup>NS</sup> |

Source: Field survey, 2021 ]

R-chi-square = 109.25, Log Likelihood = -128.641, Pseudo-R<sup>2</sup> = 0.634. \*\*\*, \*\*, \* and <sup>NS</sup> shows the significant at 1%, 5% 10% and not significant respectively. Values in bracket represent are z - values

**Table 5: Constraints to Effective use of mass media in enhancing arable crop production**

| Constraints                        | Factor 1              | Factor 2               | Factor 3                  |
|------------------------------------|-----------------------|------------------------|---------------------------|
|                                    | Financial constraints | Individual constraints | Institutional Constraints |
| Poor infrastructural development   | 0.067                 | -0.341                 | 0.865                     |
| Erratic power supply               | 0.267                 | -0.071                 | 0.347                     |
| High cost of devices               | 0.541                 | 0.331                  | -0.338                    |
| Inadequate skills                  | -0.344                | 0.617                  | 0.076                     |
| Peer group influence               | 0.342                 | 0.714                  | -0.311                    |
| Inadequate capital                 | 0.823                 | -0.067                 | 0.294                     |
| Language barrier                   | 0.254                 | 0.669                  | 0.221                     |
| Policy inconsistency               | 0.318                 | -0.447                 | 0.542                     |
| Institutional barriers             | 0.089                 | 0.316                  | 0.287                     |
| Time of broadcast of programme     | 0.331                 | -0.261                 | 0.732                     |
| Limited coverage of farmers' needs | -0.054                | 0.334                  | 0.606                     |
| High cost of service               | -0.783                | 0.047                  | 0.322                     |
| Cultural barriers                  | -0.040                | 0.883                  | 0.078                     |

Source: Field Survey, 2021