

## Proceedings of the Annual Conference of the Agricultural Extension Society of Nigeria

**Number:** Twenty-Second Annual Conference

**Theme:** Mainstreaming Entrepreneurship in Agricultural Extension Practice in Nigeria

**Date:** 23<sup>rd</sup> -26<sup>th</sup> April, 2017. **Venue:** University of Port Harcourt, River State, Nigeria

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### Technologies Available for Empowering Women in Cassava Production in Abia States, Nigeria

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#### Abstract

*The study assessed the technologies available for empowering women in cassava production in Abia State. The objectives were to determine the availability and utilization of technologies for empowering women in cassava production. Questionnaire was the instrument for data collection which was developed on a 4-point measuring scale and was validated by peer review of researchers in agricultural extension. Reliability was established by the Cronbach's alpha which gave co-efficient of  $r_{\alpha} = 0.74$  indicating a high reliability. Multi-stage random sampling technique was used to select a sample size of 240 and the extension field officers were used as research assistants to facilitate the administration and retrieval of the questionnaire. Data analysis was achieved with the use of descriptive statistics such as frequency, mean which referenced  $x = 2.50$  as the benchmark and inferential statistics as t-test at 0.050 level of significance. The findings revealed that majority ( $x = 2.56$ ) agreed that technologies were available for empowering women in cassava production while ( $x = 2.03$ ) indicated that the extent women were empowered utilizing technologies for cassava production was low. The t- test of no mean significant difference was not rejected because  $t = 0.01$  at  $P \geq 0.05$  which indicated no mean difference between availability and utilization of technologies for empowering women cassava producers. On the basis of the findings the study recommended that more extension field personnel should be employed and retrained on how to train women on how to use the technologies.*

**Keywords:** women, empowerment, cassava, production

#### Introduction

Women play important but significant role in agricultural production in Nigeria. Women constitute 52% of Nigeria population (Federal Government of Nigeria, 2006). Shitu (2012), pointed out that 69% of women provide for agricultural labour force and produce 75 – 80% of food for households and exports in Nigeria.

Nigerian farmers need agricultural extension to educate, inform, and train them to enable them adopt technologies, to increase their production, enhance food security, income and standard of living. Anaeto (2012) pointed that for agriculture to improve,

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the farmers have no alternative than to learn and adopt the recommended technologies disseminated by the extension system. Ansah and Gyoung-Rae (2014), observed that many good agricultural technologies remain unused by farmers to improve crop yield. The Agricultural Development Programme (ADPs) is currently responsible for transferring technologies in collaboration with the Research Institutes (National Root Crops Research Institute and International Institute for tropical Agriculture) and Input Agencies (Agbarevo, 2010).

Empowerment of women in the utilization of available technologies for cassava production is the sole responsibility of agricultural extension services. This involves the giving of power to perform a task (Oxford English Dictionary, 2012). Any meaningful empowerment programme for women should start with education whether formal or informal because the literacy rate and empowerment index for women were 48% and 42.64% in favour of the men (Federal Government of Nigeria, 2006). According to Nigerian Demographic and Education Survey (2008), it indicated that 68.1% of women in South Eastern Nigeria had no formal education, of this, 46.5% live in rural areas where the bulk of the farming activities take place.

Acha (2014), indicated that the surest means of empowering women using technologies in cassava production is by educating women in agronomic, business management and information communication technologies in cassava production.

Agbarevo (2010) and Asiabaka (2002), enumerated the extension strategies that can be utilized in empowering women as follows: individual strategies which include: individual demonstration, individual farm and home visits, office and telephone calls. The group strategies include: group demonstration, workshops, seminars, conferences, excursions and field trips, symposia, field days and agricultural shows. They pointed out that mass strategies are radio, television, internets, newspapers magazines, newsletters, bulleting and pamphlets.

Technology is the scientific study and use of mechanical arts and applied science and application of these two practical tasks in industries (Ekong, 2003). The impact of agricultural technology cannot be realized without an instructor. Thus extension workers and officers are employed to disseminate information and help in training the local farmers on the use of technologies (CBN, 2003). Some of the technologies in agriculture include; the use of machines such as tractor, harvesters, planters, generally improved seeds and cuttings, herbicides, pesticides, rodenticides, ringers, plough, harrows, sprayers etc. The use of agricultural technology helps to reduce stress and drudgery in agronomic and business management operations in crop production (Ekong, 2003).

Cassava (*Manihot esculenta*) production in Nigeria serves as a major source of income for rural farmers over 30 million constituting mostly processors and traders and it has potential in the fight against hunger and food insecurity (Gregory *et al.*, 2000). One major way of ensuring the foregoing values of cassava is to inculcate the advanced technologies which are needed in the production process to sustain the desirable qualities and emerging changes in dietary preferences (Abdoulaye *et al.*, 2014). Land preparation using ploughs, harrows, and ridgers for cassava is similar to

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that of the other tropical tuber crops. The use of mounds and ridges permit easier root penetration and equipment for harvesting and sprayers for insecticides, pesticides and herbicides in post-planting practices. Normal propagation of cassava is by means of stem pieces taken from matured portions of the stem. It can also be propagated with the use of true seed. Stem pieces used for cassava propagation should be 15-30cm long and spacing is usually 1m per stand. A spacing of 1m on the row and 1m between rows is the common practice. However, with cultivar whose soot does not spread appreciably, spacing as close as 80cm x 80cm may be used (Sarwatt, 2006).

in the use of available technologies for empowering women in cassava production is looking at the technologies involving both agronomic and business management operations in cassava production by women. Iheonunekwu (2012), defined as the willingness and the ability of an individual to seek out investment opportunities, establish and run an enterprise successfully. The involves the activities such as identification of business opportunities, decision to exploit opportunities for profit, establishment of business enterprise, pooling of various resources needed for production, distribution of goods and services, risk bearing, innovativeness, organization and management of human and material resources for the attainment of the objectives of the enterprise.

Schumpeter (1976), viewed as “the gale of creative destruction” to replace in whole or in part inferior offerings across markets and industries, simultaneously creating new products and new businesses. This can be viewed in line with how new farming technologies have replaced the old ones. The objective behind empowering women in for cassava production is to enhance women capabilities in not only the use of technologies in the production and processing of cassava tubers, in addition in use of the information communication technologies, distribution, transportation and marketing of cassava and cassava products.

Agricultural extension system in Abia State has the Women in Agriculture arm that is supposed to train and empower women in technologies in cassava production. Anaeto (2012), revealed that women constitute 69% of agricultural labour force. Unfortunately, according to Yemisi, Aisha and Muktar (2009), women face some challenges that are socio-cultural and institutional based that may hinder empowering them utilizing technologies in cassava production in Abia State. These challenges are limited access to extension services, land, fund, input and market. Yemisi *et al.*,(2009), indicated that some of the women cassava farmers use rudimentary technologies which may not increase production. Based on these backdrops the study determined the extent women cassava farmers were empowered in utilizing technologies in cassava production in Abia State.

### **Objective of the study**

The overall objective of this study was to determine the extent technologies are used in empowering women in cassava production in Abia State. The specific objectives were:

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- i. determine the extent technologies are available for empowering women in cassava production in Abia State;
- ii. determine extent women are empowered using technologies in cassava production in the study area; and
- iii. ascertain the constrains on empowering women in utilizing technologies in cassava production in the study area.

## Hypothesis

**H<sub>0</sub>:** There is no significant mean difference between the extent technologies are available and their utilization in empowering women for cassava production in Abia state.

## Methodology

The study adopted survey design to determine the technologies for empowering women in cassava production in Abia State. The population comprises of all the women cassava farmers in the three (3) agricultural zones of Abia State. The study adopted multi-stage sampling technique. First, the purposive sampling technique was used to select the three (3) agricultural zones of Abia State. Secondly, simple random sampling technique was used to select eight (8) local government areas out of seventeen (17) in the three (3) agricultural zones. These include Ikwuano, Umuahia North, Bende, Umunneochi, Ohafia, Isialangwa North, Isialangwa South and Ugwunagbo local government areas. Thirdly, three (3) communities were randomly selected from each local government area and finally ten (10) women cassava farmers were randomly selected from the sampled communities. The sample size was 240.

## Data Collection

The instrument for data collection was the questionnaire which was the source of the primary data. This instrument was developed on a 4-point measuring scale of Strongly Agreed [SA] = 4; Agreed [A] = 3; Disagreed [D] = 2 and Strongly Disagreed [SD] = 1. The instrument was validated by a peer review of research experts in Agricultural Extension Department of Michael Okpara University of Agriculture, Umudike. The reliability of the instrument was realized by conducting a pilot sampling which involved administering the instrument in Avutu Community in Obowo local government area of Imo State. The data collected was subjected to Cronbach's Alpha test of reliability correlation co-efficient which yielded the co-efficient  $\alpha = 0.74$  which confirmed instrument was highly reliable. The instrument was administered by the help of research assistants such as women union development executives and extension officers in order to ensure prompt distribution and retrieval of the completed questionnaire. The data analysis adopted was descriptive statistics such as frequency and mean and t-test which was tested at 0.05 level of significance.

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### Results and Discussion

#### Available Technologies for Empowering Women in Cassava Production

The Table 1 shows that technologies were moderately available for utilization in empowering women by extension service with the pooled mean of 2.56. Specifically, technologies such as pre-planting ( $\bar{X} = 2.18$ ) and harvesting and transportation ( $\bar{X} = 1.80$ ) were adjudged as being slightly available. Planting technologies using improved varieties and fertilizers were highly available with ( $\bar{X} = 3.34$ ) and post planting and processing technologies were moderately available ( $\bar{X} = 2.29$ ) and ( $\bar{X} = 1.80$ ) respectively for empowering women. These findings were based on the benchmark of 2.50. This implied that technologies were available but their utilization in empowering women was inadequate owing to the nature of women and their level of extension education in the rural areas. Anaeto (2012) contended that for women to improve their production capacity and make profit in cassava business, their only alternative is to learn and adopt technologies in cassava production.

**Table 1: Technologies available for empowering women in cassava production**

Available technologies for empowering women in cassava production	$\bar{X}$
Pre-planting technologies such as ploughs, Harrows and ridgers	2.18
Planting technologies such as use of improved Varieties of cassava and fertilizer	3.34
Post-planting technologies such as sprayers for Insecticides, pesticides and herbicides application	2.92
Equipment for harvesting of tubers and transportation	1.80
Processing machines such as peeling, milling, pressing and frying equipment	2.54
<b>Pooled Mean</b>	<b><math>\bar{X}_1 = 2.56</math></b>

*Source: Field Survey, 2016*

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### Extent Women Were Empowered by Extension Officers in Using Technologies.

Table 2 indicates that women farmer was slightly empowered by extension workers using technologies in Abia State with the pooled mean ( $\bar{X} = 2.03$ ). It was specifically shown that women were not empowered ( $\bar{X} = 1.75$ ) in pre-planting and in post harvesting ( $\bar{X} = 1.75$ ) technologies in cassava production. Women farmers were slightly empowered to secure inputs ( $\bar{X} = 2.29$ ), business management skills ( $\bar{X} = 2.04$ ) and extension methodologies ( $\bar{X} = 2.45$ ). These findings were based on the benchmark of 2.50. The implication is that the degree of empowering women using technologies is skill low. No wonder, Yemisi *et al.*, (2009) indicated that women were grossly marginalized generally due to socio-cultural and institutional concomitants. This tends to hinder their abilities and willing to participate fully in the empowerment opportunities offered by extension service system.

**Table 2: Extent women are empowered by extension officers in utilizing technologies in cassava production.**

<b>Extent women are empowered by extension officers in using technologies</b>	<b><math>\bar{X}</math></b>
Empowering women by extension workers using agronomic technologies for pre and post-planting through demonstration, SPAT, OFAR and farm visits	1.75
Empowering women using post harvest technologies such as processing through fieldtrips, field days and workshops	1.63
Empowering women using extension personal for for securing inputs such as improved varieties, machines, agro-chemicals, finance and land through advocacy using inputs agencies and the government.	2.92
Empowering women by extension officers in business management such as identification of marketing opportunities, advertizing, recording, financial and human resource management through seminars, conferences and workshops.	2.04
Empowering women using extension methodologies Such as individual, group and mass media in educating And informing farmers on both agronomic and business Management skills.	2.45
<b>Pooled Mean</b>	<b><math>\bar{X}_2 = 2.03</math></b>

Source: Field Survey, 2016

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### Constrains to Empowering Women in Utilizing Technologies.

Table 3 reveals that women suffer a lot of constrains on empowering them using technologies in cassava production in Abia State with the pooled mean ( $\bar{X} = 3.19$ ). These constrains include low access to extension services ( $\bar{X} = 2.61$ ), low level of production and commercialization of cassava and cassava products ( $\bar{X} = 2.85$ ), poor access to farm inputs ( $\bar{X} = 3.65$ ) and small holdings of women farms ( $\bar{X} = 3.33$ ). These findings were based on the benchmark of 2.50. The implication is that inspite of the fact that they produced the bulk of food to feed the world they are still marginalized. Yemisi *et al.*,(2009) had no doubt expressing the challenges faced by women that limited empowering them using the technologies in cassava production.

**Table 3: Constrains on empowering women in the utilization of technologies in cassava production**

constrains	$\bar{X}$
Low access to extension education on the use of technologies for pre and post planting, harvesting and processing activities.	2.61
Low level of extension education in production and commercialization of cassava and its products	2.85
Poor access to farm inputs such as capital, land, improved varieties, agrochemicals, machines for production and processing.	3.65
Bulkiness and perishability of tubers make storage and transportation difficult	3.50
Low level of small holdings of women cassava Farmers Make supply to markets via processors very inconsistent and unsustainable	3.33
<b>Pooled Mean</b>	<b><math>\bar{X}_3 = 3.19</math></b>

Source: Field Survey, 2016

### Availability and Utilization of Technologies.

Table 4 shows Z-test analysis of the difference between availability and utilization of technologies in the study area. The result revealed that there was no significant difference in availability and utilization of technologies in the study area at  $P \leq 0.05$  alpha level.

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**Table 4: Difference between availability and utilization of technologies**

Category	$\bar{X}$	SD	DF
Available technology	2.56	.82	
Utilization technologies	2.03	.59	238

Source: Field Survey, 2016

### Conclusion and Recommendations

Technologies were available for empowering. However, there was no significant mean difference in availability and their utilization in empowering women in cassava production. The extension system should collaborate with policy makers to recruit more women extension workers to beef-up the staff strength to empower women in the use of technology in cassava production. The extension system should partner with input agencies to empower women in the use of technologies such as the use of farming machines and agro-chemical equipment. The women cassava farmer should be empowered by eliminating socio-cultural barriers that limit their access to extension services, land and credits to enable them use technologies in cassava production.

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