



Perceived Effect of Cassava by – Products on Poverty Alleviation among Rural Dwellers in Abia State, Nigeria

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Abstract

The study measured the variables: socio- economic characteristics of the respondents, identified the position of cassava- crop among other arable crops in the farming system of the study area; ascertained the level of preference of cassava by- products in the menu of the respondents; and determined the limiting factors to cassava- roots production in the study area. A sample size 144 respondents was generated via multi – stage sampling procedure. Data were generated using questionnaire and analyzed using descriptive statistics such as frequency, percentage, mean, ranks, and pooled mean. Results showed 42 years as the mean age of the respondents and 83% of them were married and 14% single respectively. About 69, 41.7, and 27.8% of the respondents were males, farmers and traders respectively. About 78% of the respondents were literates and earned ₦30,291.67 as a mean monthly income. About 1.3 hectares of land was recorded as the mean farm size with 5 persons as the mean household size and about 69% of the respondents had extension contacts between once every week and once every month. Results further showed cassava – crop ($X= 3.56$) as the most cultivated and preferred arable crop amongst others in the study area. Garri + soup ($X= 3.56$) was equally, identified as the most consumed and preferred diet of cassava by- products. Inadequate farm- land (94%), irregularities in the acquisition of fertilizer (93%), high rate of fluctuation in the market demand for cassava by – products (92%), high rate of soil erosion/ landslide (90%), high cost of labour (83%), and late supply of fertilizer (69%) among others were identified as factors limiting the production of cassava- roots in the study area. The study concludes that cassava crop stands out as the most cultivated and most consumed source of carbohydrate in the study area. The study therefore, recommends more campaigns on the importance of value addition to cassava roots among the respondents. Extension Agents should gear more efforts in disseminating the pro vitamin variety of cassava to the rural farmers since the study has confirmed that garri is the most preferred cassava- by products and since, other studies have shown that cassava- by products contain low protein content. The best option to curtailing this problem, will be through the cultivation of pro- vitamin variety of cassava mostly in the study area.

Keywords: Cassava by – products, Poverty Alleviation, Rural Dwellers and Abia State.

INTRODUCTION

One of the developmental challenges facing Nigeria today is on how to reduce the high level of poverty prevalent among her teeming population. The National Bureau of Statistics (2012) reported that Nigerian population was growing at an annual rate of 3.3%, while the food subsector was growing at an annual rate of 2.0%. The implication being that a gap existed between food demand and supply. The United Nation's Human Development Index (HDI) (2016) equally, reported that Nigeria ranked 152 out of 188 of countries with low HDI in the world. Adegboye (2014) cited in Mazza (2016) also posited that increase in population at a rate considerably higher than the rate of increase in food production has continued to widen the gap between domestic food supply and demand. Consequently, this disparity has led to rise

in food prices in many Nigerian cities, thereby creating food insecurity, unemployment, income inequality, rise in crime and other social vices among the populace.

Poverty though a multidimensional concept, is the state of deprivation of the good things of life. It is also a situation of lack of essential things that make life worth living. It depicts poor nutrition, inadequate shelter, lack of voice and poor health standards (Bellu and Liberati, 2005). Poverty is a global phenomenon which threatens the survival of mankind. According to Edoumiekumo, Karimo and Tombofa (2013) poverty encompasses different dimensions of deprivations that relate to human capabilities, including consumption and food security, health, education, rights, voice, security, dignity and decent work. It was on this note that Donovan and Rivera (2000) asserted that poverty is not a characteristic of certain group of people that it rather depicts a particular situation in which people may find themselves at a given point in time. They therefore, argued that human beings who have to cope with poverty, either periodically or more permanently remain full agents, just as any other human being, except that their situation is constrained by lack of resources or strategic capacities. They therefore suggested combating poverty through promotion of institutional change. In Abia State, about 60% of its population lives below United States of America's \$2 per a day (ASSHDP, 2010 - 2015)

Poverty alleviation in the other hand, encapsulates the efforts of government, Non- governmental Organizations (NGOs) and other agencies directed towards improving the conditions of the poor. It was based on the above, that IFAD (2001) posited that poverty reduction is not only about enabling poor rural men and women transform their lives and livelihoods but, also supporting governments and civil society in creating and maintaining the conditions that allow them to do so. In like manner, Innocent et al, (2014) defined poverty alleviation as the creation of general conditions which allow men to live in dignity, free to take their own decisions in life and get increasingly empowered to participate in social, political and economic decision making. Therefore, the central feature of poverty alleviation is empowerment.

Cassava (*manihotesculenta*) is the third largest source of carbohydrate food in the tropics, and gives the third highest yield of carbohydrates per cultivated area among crops plants after sugarcane and sugar- beets (Obinna, 2015). Cassava is a hardy crop that grows reasonably well on poor soils and in areas with low or unpredictably rainfall. It is a popular crop among poor farmers because it requires few inputs besides, labour to produce a reasonable yield (Nwakor and Nwakor, 2012). Cassava is the most important root crop grown in Nigeria. It occupies a strategic position in the farming and food systems of Nigeria, essentially because of its efficient production of food energy all the year round (Nwosu and Ogbonnaya, 2014). Cassava crop is tolerant to extreme stress condition as well as adapts to diverse ecologies in Nigeria (Mazza, 2016). The root dry matter content of cassava is higher than other crops, at 35 – 40%, giving optimum conversion rates of 2.5 : 1 (ROOTS, 2016). Cassava equally, provides very high yields, about 140 t/ ha and very high energy/ ha much more than sorghum, maize and rice (Ikwelle et al., 2003). It holds the potential for enhancing the nation's economy through generation of employment, income, foreign exchange, food security, and provision of primary raw materials for small- scale agro – allied industries and secondary raw materials for big industries (Nwosu and Ogbonnaya, 2014). It was based on the above qualities that cassava has been recently transformed from being a woman's crop to cash and industrial crop and equally remains the major staple food mostly in the South Eastern Nigeria (Nwakor and Nwakor, 2012). However, the early occurrence of primary deterioration of cassava- roots as well as its high content of toxic hydrogen cyanide (HCN) makes processing of cassava – roots into its by- products very indispensable (Nwosu and Ogbonnaya, 2014). Nwakor and Nwakor (2012) reported that cassava generates about 25 % of cash income of all food crops grown among the farming households mostly in the Eastern part of Nigeria. They argued that for cassava production to be market driven; value must be added to it, through its conversion into other by – products such as garri, fufu, tapioca, starch, chips, flour and animal feed that are more stable, safer, and available products that are market preferred (Nwakor and Nwakor, 2012). It was based on the above that the study sought to investigate the perceived effect of cassava root by – products on poverty alleviation among rural dwellers in Abia State, Nigeria. The specific objectives were to:

- (i) examine the socio- economic characteristics of the respondents;
- (ii) identify the position of cassava- crop among other arable crops in the farming system of the study area;
- (iii) ascertain the level of preference of cassava by- products in the menu of the respondents; and
- (iv) determine the limiting factors to cassava- roots production in the study area.

METHODOLOGY

The study was carried out in Abia State. The State is made up of three Agricultural Zones, namely: Ohafia, Umuahia and Aba Agricultural Zones respectively. It is equally composed of 17 Local Government Areas (Obinna, 2015). The extent of the area is about 5833.7 Km² with a total population density of 486 persons per Km² (Ekong, 2010). Agriculture is the main occupation of the people contributing about 27% to the State GDP (Abia SHDB, 2007). Cassava occupies about

68.7% of the total annual farm holding per household in Abia State (Abia- ADP, 2006). Other arable crops include: yam, cocoyam, maize, melon, vegetables and ginger among others. The State lies within Longitude $7^{\circ} 23' E$ and $8^{\circ} 2' E$ and Latitude $4^{\circ} 47' N$ and $6^{\circ} 12' N$ and is in the Rainforest Belt of Nigeria (Abia-ADP, 2006). A sample size of 144 respondents (48 from each of the three Agricultural Zones) generated via multi- stage random sampling method was used. Primary data were generated using structured questionnaire and were analyzed through the use of descriptive statistics such as frequency count, percentages, mean, pooled mean, and ranks respectively. Objectives i, & iv were analyzed through the use of frequency, percentage, mean and ranks. Objectives ii & iii were analyzed using pooled means and ranks through the application of 4-point Likert type scale of most preferred weighted and scored 4 points, preferred weighted and scored 3 points, not most preferred weighted and scored 2 points and not preferred weighted and scored 1 point respectively. Any mean score ≥ 2.5 was adjudged significant, while any mean score < 2.5 was adjudged not significant.

RESULTS AND DISCUSSIONS

Socio – Economic Characteristics

Table 1 shows the mean age of the respondents to be about 42 years, among whom 83.3% were married and 14% single. Table 1 equally, shows that about 62.5% of the respondents were males and 37.5% females respectively. It further, shows that about 41.7% of the respondents were full- time farmers, while 27.8% were full- time traders. Table 1 further shows that 13.9% of the respondents were public servants and 16.7% were of other professions respectively. About 98.6% of the respondents were literates, since 22.2% attended primary education, 69.4% secondary education and 6.9% higher institutions respectively with only 1.4% not having attended any formal education. Table 1 equally, shows that the respondents earned a mean monthly income of ₦30,291.67 with a mean farm size of 1.3 hectares of farm land with a mean years of farming experience of about 15 years and a mean household size of about 5 persons. Table 1 equally, shows that only 1.4% of the respondents did not have any extension contacts, 27.8% had extension contacts every week, 41.7% had extension contacts every month, 20.8% had extension contacts every 6 months and only 8.3% had extension contacts every year respectively. The implications of the findings in Table 1 are that the respondents were mature, responsible, energetic and should be at the peak of their livelihood activities. This corroborates Ekong (2010) who stated that in Nigeria being married shows a sign of responsibility and maturity. The finding also showing the respondents earning a mean monthly income of ₦30,291.67 implies that the respondents earned more than the national minimum wage of ₦18,000.00. This is due to the high inflation rate in Nigeria today and coupled with the fact that cassava crop has assumed a dual status as a staple and cash crop thereby generating higher income than before. This corroborated Nwosu and Ogbonnaya (2014) who stated that cassava crop occupies dual position as a staple and cash crop in Nigeria. The finding in Table 1 recorded that the mean farm size of the respondents was 1.3 hectares this is due to the fact that arable land is very scarce in Abia State due to her high population density (486 persons/KM²) one of the highest in Nigeria (Ekong, 2010). The findings equally, recorded mean years of farming experience of about 15 years with about 68% of the respondents having between once every week to once every month on extension contacts. This implies that the respondents understand their environment very well therefore, with their indigenous knowledge along- side with good extension contacts have advantage of better resource management and adoption of improved technologies that result to higher yield mostly that of cassava- roots (NRCRI, 2013).

Determination of the position of cassava crop among other arable crops in the farming system of the study area.

Table 2 shows that cassava- crop ranked 1st among the arable crops in the study area with a mean score (X= 3.56), followed by maize in the 2nd position (X= 3.21). Rice ranked 3rd with a (X=2.94) and yam ranked 4th with a score (X= 2.88), followed by beans in the 5th position with a (X= 2.67). Cocoyam ranked 6th with (X= 2.53) respectively. Other arable crops with insignificant mean scores include sweet- potato which ranked 7th (X= 2.39), followed by ginger which ranked 8th (X= 2.04) and the three- leaved – yam which ranked 9th (X= 1.69) respectively. The finding implied that cassava and maize crops were the most preferred crops with mean scores (X= 3.56) and (X= 3.21) respectively in the study area, while rice, yam, beans and cocoyam were the moderately preferred crops with mean scores (X= 2.94), (X= 2.88), (X= 2.67) and (X= 2.53) respectively. The lowly preferred crops included sweet – potato, ginger and three- leaved yam which had mean scores (X= 2.39), (X= 2.04) and (X=1.67) respectively. The finding corroborates Nwakor and Nwakor (2010) who reported that that cassava- crop generated about 25% of cash income of all food crop grown among the farming households in the Eastern part of Nigeria. The NRCRI (2016) as cited in ROOTS (2016) that cassava dry matter content was higher than other crops at 35 – 40% giving optimum conversion rates of 2.5: 1. In the same vein, Abia –ADP (2006) equally reported that cassava – crop occupied about 68.7% of the total annual farm holding per household in Abia State.

Table 1. Socio- Economic Characteristics of the Respondents

S/No	Variables	Frequency	Percentage (%)	Mean
1	Age in Years			
	18 - 30	40	27.78	
	31 - 43	45	31.25	42 years
	44 - 66	40	27.78	
	67 and Above	19	13.19	
2	Marital Status			
	Single	14	9.72	
	Married	120	83.33	
	Separated/ Divorced	6	4.17	
	Widowed	4	2.78	
3	Gender			
	Male	90	62.5	
	Female	54	37.5	
4	Primary Occupation			
	Farming	60	41.67	
	Trading	40	27.78	
	Public/ Civil Servants	20	13.89	
	Others	24	16.67	
5	Educational Qualifications			
	No formal education	2	1.39	
	Primary School Certificate	32	22.22	
	Secondary School Certificate	100	69.44	
	Higher Institution Certificate	10	6.94	
6	Monthly Income in Naira (₦)			
	≤ ₦18,000.00	34	23.61	
	₦19,000.00 - ₦37,000.00	80	55.56	₦30,291.67
	₦38,000.00 - ₦56,000.00	20	13.89	
	₦57,000.00 and above	10	6.94	
7	Farm Size in Hectares (ha)			
	≤ 0.5	50	34.72	
	0.6 - 1.1 ha	60	41.67	
	1.2 - 1.7 ha	22	15.28	1.3 hectares
	1.8 - 2.3 ha	8	5.56	
	2.4 and above	4	2.78	
8	Years of Farming Experience			
	≤ 10years	40	27.78	
	11 – 21	82	56.94	15 years
	22 and above	22	15.28	
9	Household Size			
	≤ 2 persons	14	9.72	
	3 - 5 persons	50	34.72	
	6 and above	80	55.56	About 5 persons (4.91)
10	No. of Extension Contacts			
	None	2	1.39	
	Once every week	40	27.78	
	Once every month	60	41.67	
	Once every 6 months	30	20.83	
	Once every Year	12	8.33	

Source: Field Survey 2017

Table 2: Distribution of the Respondents According to the Position of cassava crop among other arable crops in the farming system of the study area.

S/No	Cassava By- products	Credibility index rating				TOTAL	Mean	Ranks
		M/P	P	N/M/P	N/P			
01	Cassava	80	64	-	-	512	3.56	1 st
02	Maize	60	74	10	-	462	3.21	2 nd
03	Rice	50	50	30	14	424	2.94	3 rd
04	Yam	50	50	20	24	414	2.88	4 th
05	Beans	40	50	20	34	384	2.67	5 th
06	Cocoyam	30	50	30	34	364	2.53	6 th
07	Sweet Potatoes	30	40	30	44	344	2.39	7 th
08	Gingers	20	30	30	64	294	2.04	8 th
09	Three Leaved yam	10	20	30	84	244	1.69	9 th

Source: Field Survey 2017.

N/B : M/P = Most Preferred, weighted and scored 4 points.

P = Preferred, weighted and scored 3 points.

N/M/ P = Not Most Preferred, weighted and scored 2 points.

N/P = Not Preferred, weighted and scored 1 point respectively.

Decision Rule: Any mean score ≥ 2.5 was adjudged significant, while any mean score < 2.5 was adjudged not significant.

Therefore, Means scores between 1 - 2.49 = Low Preference

2.50 - 2.99 = Moderate Preference

3.00 – 4.00 = High Preference

Table 3. Distribution of the Respondents According to Their Preference of Cassava By- products in Their menu in the study area.

S/No	Cassava By- products	credibility index rating				TOTAL	Mean	Ranks
		M/P	P	N/M/P	N/P			
01	Garri with soup	80	64	-	-	512	3.56	1 st
02	Fufu with soup	60	74	10	-	472	3.28	2 nd
03	Garri + sugar + milk	50	50	40	4	434	3.01	3 rd
04	Tapioca	50	50	38	6	432	3.00	4 th
05	Abacha	50	50	36	8	430	2.99	5 th
06	Cassava- chin- chin	20	40	30	54	314	2.18	6 th
07	Cassava- doughnut	20	30	40	54	304	2.11	7 th
08	Cassava – bread	20	30	30	64	294	2.04	8 th
09	Cassava – cake	15	30	40	59	289	2.01	9 th
10	Boiled cassava	10	20	40	74	254	1.76	10 th

Source: Field Survey 2017.

N/B : M/P = Most Preferred, weighted and scored 4 points.

P = Preferred, weighted and scored 3 points.

N/M/ P = Not Most Preferred, weighted and scored 2 points.

N/P = Not Preferred, weighted and scored 1 point respectively.

Decision Rule: Any mean score ≥ 2.5 was adjudged significant, while any mean score < 2.5 was adjudged not significant.

Therefore, Means scores between 1 - 2.49 = Low Preference

2.50 - 2.99 = Moderate Preference

3.00 – 4.00 = High Preference

Table 4. Distribution of the Respondents According to Limiting Factors to Cassava Production in the Study Area.

S/No	Variables (Problems)	Frequency	Percentage (%)	Ranks	
01	Inadequate Farm- land	Yes	135	93.75	1 st
		No	09	6.25	
02	Irregularities in the acquisition of Fertilizer	Yes	134	93.06	2 nd
		No	10	6.94	
03	High Fluctuation rate in Market Demand for Cassava – Products	Yes	132	91.67	3 rd
		No	12	8.33	
04	High Menace of soil erosion/ landslide	Yes	130	90.28	4 th
		No	14	9.72	
05	High Cost of Labour	Yes	120	83.33	5 th
		No	24	16.67	
06	Late Supply of fertilizer	Yes	100	69.44	6 th
		No	44	30.56	

Source: Field Survey 2017

The level of Preference of Cassava By- products in the Menu of the Respondents

Table 3 shows that garri with soup was the most consumed and preferred by – product of cassava by the respondents with a mean score of 3.6 and was ranked 1st. This was followed by fufu& soup in the 2nd position with a mean score of 3.3. Garri + sugar+ milk ranked 3rd with a mean score of 3.01, and tapioca ranked 4th with a mean score of 3.00. Abacha ranked 5th with a mean score of 2.99 respectively. The non- significant diets include cassava – chin – chin with a mean score of 2.18 and ranked 6th, cassava – doughnut ranked 7th with a mean score of 2.11, cassava- bread ranked 8th with a mean score of 2.04, cassava- cake ranked 9th with a mean score of 2.01 and boiled – cassava ranked 10th with a mean score of 1.76 respectively. The finding implies that garri + soup, fufu + soup and garri+ sugar + milk and tapioca were the highly consumed and preferred cassava- by products with mean scores of 3.56, 3.28, 3.01 and 3.00 respectively. While abacha with a mean score of 2.99 was moderately consumed and preferred diet and cassava- chin – chin, cassava- doughnut, cassava- bread, cassava – cake and boiled cassava respectively with mean scores of 2.18, 2.11, 2.04, 2.01 and 1.76 respectively were lowly consumed and preferred diets in the study area. The finding corroborates the ROOTS (2016) which reported that garri + soup was the most consumed and preferred delicacy in the South East Nigeria.

LIMITING FACTORS TO CASSAVA ROOT PRODUCTION IN THE STUDY AREA

Table 4 shows that all the six problems hindering the production of cassava in the study area investigated upon were significant. Inadequate farm – land ranked 1st with about 94% of the respondents confirming that. The finding corroborates Ekong (2010) who reported that Abia State was among the states with the highest population density about 486 persons/ Km². This implies that most of the arable lands in the state are lost to construction of buildings. Irregularities in the acquisition of fertilizer ranked 2nd (93%) of the respondents confirming that. This was caused by the highly placed and politicians who high-jacked subsidized fertilizer which never got to the farmers this made the immediate past minister for agriculture Akiyemi to introduce the E- wallet system of fertilizer acquisition in Nigeria, but apparently, it looks if the system never achieved it's purpose very well. High fluctuation rate in the market demand for cassava products ranked 3rd with (92%) of the respondents. It was based this fact that the Extension Agents were encouraged to extend value addition methods of cassava- roots to the farmers in order to provide more stable and market driven cassava- by products. This corroborated Nwakor and Nwakor (2010). High rate of erosion/ landslide menace ranked 4th with (90%) of the respondents. This corroborates the report that Abia State is among the states with the highest ecological problems in Nigeria due to erosion/ landslide problems. High cost of labour ranked 5th with (83.3%) of the respondents. This is due to the fact that the inadequate farm- lands forced most of the youths to migrate to other

cities for job leaving the elderly to farm the land which results to lack of youthful manpower thereby causing high labour cost in the area. Late supply of fertilizer ranked 6th with (69%) of the respondents.

SUMMARY, CONCLUSION AND RECOMMENDATIONS

In summary the study which made use of structured questionnaire in the collection of primary data used a sample size of 144 respondents realized via multi stage sampling methods carried out in Abia State, Nigeria. It Comprised of 63% male and 37% female with a mean age of 42 years and about 83% married with a mean monthly income of about ₦30,00.00. Seventy eight percent of the respondents were literates with farming (41.7%) as the major occupation, followed by trading (28%) with a mean farm size of 1.3 hectares and 15 years as the years of business experience and about 69% having extension contacts between once every week to once every month respectively. The study identified cassava crop as the most cultivated ($X= 3.56$) among other arable crops in the study area. It equally, identified garri with soup ($X= 3.56$) as the most consumed and preferred diet of the respondents. The study identified inadequate farm land (94%), irregularities in the acquisition of fertilizer (93%), high fluctuation in the market demand for cassava products (92%), high menace of soil erosion/ landslide (90%), high cost of labour(83%) and late supply of fertilizer (69%) respectively as the limiting factors to the production of cassava crop in the study area. The study concludes that cassava crop stands out as the most cultivated and most consumed source of carbohydrate in the study area. The study therefore recommends as follows: (1) more campaigns on the importance of value addition to cassava roots and. (2) Extension Agents should gear more efforts in disseminating the pro – vitamin variety of cassava roots as to curtail the problem of low protein content that is very prevalent in cassava crop.

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