

## EFFECT OF COMMERCIALIZATION ON PRODUCTIVE CAPACITY AMONG CASSAVA PRODUCING HOUSEHOLDS IN IKWUANO LOCAL GOVERNMENT AREA OF ABIA STATE, NIGERIA

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### Abstract

*The study investigated factors affecting commercialization of cassava producing household in Ikwuano Local Government Area, Abia State, Nigeria. It specifically examined the socio-economic characteristics of cassava household; determine commercialization index and analyzed factors that influence commercialization among cassava producing households. The study employed purposive sampling technique in the selection of 120 respondents from one local government area (LGA) based on characteristics of interest, nearness and other related features. The selection was done from 6 communities at the rate of 20 respondents per community. Analytically, descriptive statistics, household commercialization index (HCI), and multiple regression analysis were used. The results showed that the mean age of the cassava producing household was about 40 years with a mean farming experience of 14 years. They are mostly married with an average of 5 persons per households. The result further revealed that only a few households (less than 2%) have very high commercialization orientation, which exposes the level of farming in the area. With respect to determinants of factors that influence commercialization, value of output, farm size, sex, nearness to market, membership of cooperative and farming experience were significant and found to exhibit varying degree. The study therefore recommends that support policies that sustain and improve the productivity among farming household especially land tenure policy issues, greater incentives policies for farmers in the rural areas; linkages between farm households and the markets; increase access and exchange of information on markets.*

**Key words:** Abia state, commercialization, cassava, food production, orientation

### INTRODUCTION

In 2011, the World Bank Group put the total population of Africa at approximately 1.03 billion, with a growth rate of 24 million births per annum - 168 million out of the above number are Nigerians with an annual growth rate of 3.2%. This means that the birth rate in Africa produces about 65,754 children on a daily basis. Today, Africa's population is increasing on a geometric progression, without an appreciable increase in food production to cater for the growing number of these people. The challenge affects the achievement of broad economic growth and food security, which is constrained by gap in food supply and food demand.

Agriculture remains a very good platform to reverse gaps in food production; supply and

demand because its objective is to guarantee food security, employ labour; and provides income for many households. In Nigeria, current agricultural transformation agenda has identified cassava as strategic in curbing challenges of poverty reduction and accelerate economic recovery, growth and development in addition to food security in Sub-Saharan Africa (FMARD, 2006; FAO, 2011) [12, 11]. This became the thrust behind the Presidential Initiative on Cassava in 2003 and Strategic Action Plan for the Development of the Nigeria Cassava Industry of 2006 (Cassava Master Plan, 2006) [7].

Cassava (*Manihot esculenta*) is an important staple food and cash crop in most developing world, providing basic diet to more than half billion people (FAO, 2011) [11]. It serves over 200 million Africans, second only to

maize in its calories contribution [23]. A large population of Nigerians depended on daily basis of it as their main dish. Therefore, its comparative production advantage over other stable serves to encourage its cultivation even, by the resource poor farmers who constitute over 80% of all farm holdings in Nigeria (FAO, 2000) [10, 22, 6].

Increasing demand, usage and economic value of cassava has nearly doubled the worldwide production of cassava for the last 30 years, reaching 213 million tonnes in 2005 (IITA, 2009) [14]. It is estimated that world cassava utilization will reach 275 million tonnes by the year 2020 [33], with some researcher estimating the number closer to 291 million tones. Africa currently produces more than 50 percent of the world production, with Nigeria producing nearly two-third of total cassava production in Africa, making it the highest producer in the world; a third more than Brazil and almost double the production capacity of Thailand and Indonesia (IITA, 2009) [14]. From 3.81 million hectares, it produced 45.72 million tonnes in 2006; 18% higher than its production in 2004 [29]. This figure is expected to double by 2020. Despite her advantage in cassava production, Nigeria is not an active participant in cassava trade in both regional and international markets. Most of her output is unprocessed and only targeted at the domestic food market. The reason is total lack of supply chain structure for the commercialization of secondary cassava product as a primary source of raw material for agro industries [9]. The contribution of cassava to economic growth and poverty reduction has been limited because, in time past, Nigerians see cassava as just a food security, or self sufficiency crop (FAO, 2011) [11]. It is not thought of as an agric-food enterprise capable of moving Nigeria economy forward, or able to bridge food scarcity occasioned by increasing population nor as an export earning provider.

Commercialization of household agriculture in Nigeria is a smooth conduit to increasing the productive capacity of smallholder farmers to reduce poverty; economic recovery, growth and development.

Commercialization from agricultural perspective refers to the process of increasing the proportion of agricultural production that is sold by farmers. Commercialization of agriculture as a characteristic of agricultural change is more than whether or not a cash crop is present to a certain extent in a production system. It can take many different forms by either occurring on the output side of production with increased marketed surplus or occur on the input side with increased use of purchased inputs. Commercialization is the outcome of a simultaneous decision making behavior of farm households in production and marketing [32].

The definition of commercialization adopted in this work is based on market participation and orientation. In the views of [15] and [30], a farm household is assumed to be commercialized if it is producing a significant amount of cash commodities, allocating a proportion of its marketable commodities, or selling a considerable proportion of its agricultural outputs. In this context, cassava commercialization is seen as the aggregate of household surplus presented by smallholder farmers in the market for acquisition and income.

Increasing per capita food production and raising rural incomes are arguably the greatest challenges facing Sub-Saharan Africa and the developing world more generally. The history of economic development in other regions of the world indicates that agricultural productivity growth has been the major source of sustained improvements in rural welfare [30]. The argument that productivity growth and food security in smallholder agriculture will require a more commercialized orientation implies that policy must be designed to encourage a transformation out of the semi-subsistence, low-input, low-productivity agriculture that characterizes much of rural Nigeria.

Commercialization allows increased participation of individuals and poor households in the domestic, national and international exchange economy and results in higher average farm incomes and lower farm income inequality. The farming sector has a

dual structure with subsistence farmers, who produce for their own consumption and farmers who sell at least a part of their output in the market. However, majority of the farmers from developing countries produce for own consumption and marginal surplus for the markets. As such, they do not derive fully the benefits of the market economy. Despite all these hurdles, the farmers have managed to participate in the markets by delivering food crops, fruits, vegetables and livestock products [28]. This represents a degree of commercialization.

It is a general understanding that food security is constrained by gap in food supply and food demand. Great imbalance exists in the demand and supply of cassava in Nigeria. It is estimated that her output is by far less than what would be required to satisfy the demand for processed by-products of cassava [24]. Unfortunately, supply for this product is grossly inadequate in Nigeria due in part to certain identified constraints to agricultural productivity. Many researchers such as [25, 23, 6, 22] have highlighted the challenges of agricultural and cassava productivity.

Cassava is generally believed to be cultivated by small scale farmers with low resources [9]. These smallholders, mostly subsistence producers' account for 80% of all farm-holding in Nigeria [22]. This limits their ability to compete favorably with the remaining 20% medium and large scale commercial farmers in Nigeria and other countries that have attained the desired allocative/economic and technical efficiency in cassava production. Smallholder commercialization is assumed to lead towards more specialized production systems based on comparative advantages in resource use. Today, agriculture has metamorphosed into a competitive business and it is difficult to imagine that Nigeria can achieve its food security policy and other economic objectives without enhancing the productivity capacity of household farmers who constitute a large chunk of the market participants to improve cassava production and marketing. This has made the consideration of this study necessary. Accordingly, this study examines

the effect of commercialization on the productive capacity of cassava producing households in Abia State, Nigeria. The specific objectives are to: identify the socio-economic profile of cassava farmers in Ikwuano LGA; determine and analyze the commercialization index among the compared households and analyze factors that influence commercialization among producing households.

## MATERIALS AND METHODS

The study area is Ikwuano Local Government Area of Abia State, Nigeria. The state is located within the southeastern Nigeria and lies between longitude  $04^{\circ} 45'$  and  $06^{\circ} 07'$  North and Latitude  $07^{\circ} 00'$  and  $08^{\circ} 10'$  East. Abia state is bounded by Imo state at the western border; Ebonyi and Enugu states at the North; Cross River and Akwa-Ibom states at the East and Rivers state at the south. Its population stood at about 2,883,999 persons with a relatively high density at 580 persons per square kilometer (NPC, 2007) [20]. At an annual growth rate of 2.83%, the population is projected at about 3.2 million in 2004. About 30% of the population lives in major urban areas.

Abia State is divided into administrative blocks called Local Government Areas which is grouped into three (3) agricultural Zones namely Ohafia, Umuahia and Aba Zones. In terms of occupation, about 70% of Abians are farmers and have the potentials for the production of agricultural produce and products such as palm oil, cassava, vegetables, palm kernel, yam, rice, cocoa etc, livestock, fish and also engage in food processing (ABSG, 1992) [1]. The presence of a good numbers of agricultural institutions eg. National Root Crops Research Institute, Michael Okpara University of Agriculture, Faculty of Agriculture of Abia State University, Extension outfit of Ahmadu Bello University etc in the state guarantees an unquantifiable advantage and adds to their capacity in their agricultural production.

The study adopted purposive sampling technique in the selection of location. One

LGA were selected on purpose based on characteristics of interest, nearness and other related features and 120 respondents was drawn from the area. The selection was done from 6 communities at the rate of 20 respondents per community. Primary data was used and collected with questionnaire to the selected respondents.

Analytically, descriptive statistics such as means, percentages and t-test, Household Commercialization Index (HCI) and multiple regression models was employed in realizing objectives of the study.

Following [30, 13], Household commercialization index (defined as the sum of the value of household crop sales as a proportion of the value of crop expressed in percentage terms) is presented mathematically below.

Agricultural HCI =

$$\frac{\text{Value of crop sold}}{\text{Total value of crop produced}} \times \frac{100}{1}$$

The index measures the ratio of the gross value of crop sales by household *i* in year *j* to the gross value of all crops produced by the same household *i* in the same year *j* expressed as a percentage. The index measures the extent to which household crop production is oriented toward the market. A value of zero would signify a totally subsistence oriented household and the closer the index is to 100, the higher the degree of commercialization. The advantage of this approach is that commercialization is treated as a continuum thereby avoiding crude distinction between “commercialized” and “non-commercialized” households. They effectively bring subsistence food production to the centre of discussions about commercialization [5, 16]

The multiple regression models is specified as follows:

$$Y_1 = f(X_1, X_2, X_3, X_4, \dots, X_7 + e_1) \dots \dots \dots (1)$$

Where:

$Y_1$  = Index of commercialization

$X_1$  = Farm size (hectares)

$X_2$  = Household size (No)

$X_3$  = Sex (male = 1; female = 0)

$X_4$  = Education (years)

$X_5$  = Age (years)

$X_6$  = Output (kg)

$X_7$  = Nearest to market (km)

$X_8$  = Membership of cooperative (Yes = 1; No = 0)

$X_9$  = Monthly Income (Naira)

$X_{10}$  = Farm experience (years)

$e_1$  = Error term

In this study, double log model was chosen as the lead equation. The formula is stated below

$$\text{Log } Y = b_0 + b_1 \log X_1 + b_2 \log X_2 + b_3 \log X_3 + b_4 \log X_4 + b_5 \log X_5 + b_6 \log X_6 + b_7 \log X_7 + b_8 \log X_8 \dots b_n + X_n + e \dots \dots (2)$$

## RESULTS AND DISCUSSIONS

### Socio-Economic Characteristics of Cassava Producing Households

Table 1 shows the socio-economic characteristics of cassava producing households. The age of the farmers producing cassava in household ranged from 19 to 68 years with a mean of (40.47 years). 47.50% of them fell within the age bracket of 38 to 57. This implies that most of producing households are still active towards cassava production. This result is consistent with the similar studies conducted by [2, 21]. The adult age of active farmers accounts for 47.32% of the population sampled, close to that is the middle class age (18 to 37), which has a fair share in the distribution of active farmers as it accounted for 41.67% of the total population sampled. The old age group (58 to 77years) has the lowest impact in farm work with only (10.83%) contributing to active farming among the sampled population. Naturally, younger people tend to be more productive than their older counterparts. Educationally, 33.04% of the farmers had acquired primary education, this represent a mean of 11.32%, while 42.61% of the farmers had secondary education. Only 24.35% of the respondents possess a higher education. Little education affects household ability to embrace changes and innovations especially the adoption of modern farming technology. The level of education attained not only increase

productivity but also enhances the ability to understand and adopt new methods of operations [3]. By implication, the study shows fairly high literacy level. The number of year spent in farming (farming experience) gives an indication that the cassava farmers in the area have practical knowledge about farming. Although majority of the farmers are new entrants, the mean farming experience of the farmers 14.90. This implies that they are fairly experienced in cassava production. This result is consistent with [31], who had a similar outcome in their study on Cocoyam production. The dominant household size category ranged from 2-5 persons and represented by an overwhelming percentage of 60%. This gave a mean of approximately 6 persons per household. It implies that cassava farmers in the area have fairly large household size. This is not surprising because large family sizes are common in rural areas in Nigeria.

Table 1. Distribution of the socio-economic profile of the households

Variables		
Age	Frequency	Percentage
18-37	50	41.67
38-57	57	47.50
58-77	13	10.83
Total	120	100
Mean	40.4667	
Education		
1-6 (primary)	38	33.04
7-12 (secondary)	49	42.61
13-18 (tertiary)	28	24.35
Total	115	100
Mean	11.3220	
Farming Experience		
5-20 (new entrant)	108	90
21-36 (semi-experience)	7	5.83
37-52 (highly experienced)	5	4.17
Total	120	100
Mean	14.9000	
Households size		
2-5	72	60
6-9	47	39.17
10-13	1	0.83
Total	120	100
Mean	5.553	

Source: Field Survey (2014)

### Determination and Analysis of Commercialization Index among Households

Commercialization index were used to ascertain the determination and the analysis of commercialization among households using

the formulae as stated below

$$\text{Agricultural commercialization Index} = \frac{\text{value of crop sold}}{\text{total value of crop produced}} \times \frac{100}{1}$$

Only very few Cassava producing households (1.67%) have very high commercialization orientation.

Table 2. Level of Commercialization among households

Level of commercialization	Frequency	Percentage
2-20	19	15.83
21-39	99	82.5
40-58	2	1.67
Mean	28.2327	
Total	120	100

Source: Field Survey Data (2014)

This commercialization level can be adjudged low given the fact that Nigeria remains the largest producer of cassava and Abia state belongs to the South east zone that contributes about 20% to the national basket. According to Cassava Master Plan (2006), the Nigerian Cassava belt is composed of the North Central Zone ( Benue, Nasarawa, Plateau, Niger, Kogi, Taraba and kwara States) which produces the largest quantity (about 29%) followed by the South South States (24%), South east (20%), South west (20%) while North east and North west contributed 7%.

### Factors that Influence Commercialization among Producing Households

The result of the multiple regression models to investigate the extent of variations contributed by these variables is presented in table 3. Double log functional form was chosen as the lead equation, since it had the highest value of R<sup>2</sup> of 0.72. This implies that 72% of the observed variations in the household cassava commercialized were explained by the included variables. Also, the F ratio (67.00) was significant at 1% indicating regression of best fit.

The coefficients of the following variables: sex, marital status, membership of cooperatives, farm size and nearness to market were found to be negatively signed and significant at various confidence levels. This suggests that an increase in these variables will lead to a decrease in the

productive capacity of cassava producing households, which affects commercialization orientation and market participation in the study area. The negative Size of land is in line with the findings of [18, 17], which had the same outcome. However, this result contradicts [26, 5, 27]. For instance, it is expected that increased area cultivated would have been associated with gross output, so the sign of the coefficient for land would have been positive.

Table 3. Determinants of Agricultural Commercialization

Variables	Linear	+Doubling log	Semi-log	Exponential
Constant	32.393*** (4.278)	2.814** (3.081)	-29.235 (-0.631)	3.600*** (23.427)
Sex	-0.939 (-0.345)	-0.385*** (-4.583)	-0.246 (-0.058)	-0.063 (-1.137)
Age	0.086 (0.570)	0.204 (1.139)	13.767 (1.514)	0.002 (0.531)
Marital status	3.165* (2.025)	-0.195* (-2.127)	10.010* (2.154)	0.066* (2.094)
Education	0.458 (1.384)	0.090 (0.889)	8.940* (1.733)	0.066 (0.869)
Membership of cooperative	-3.727 (-1.175)	-0.223* (-2.588)	-5.887 (-1.345)	-0.150* (-2.338)
Experience	-0.162 (0.726)	0.754*** (6.732)	-9.680* (-1710)	0.001 (0.259)
Household size	-0.884 (-0.963)	-0.225 (-1.395)	3.369** (3.803)	-0.053** (-2.834)
Income	1.622E-6 (0.170)	-0.015 (-0.274)	3.098*** (5.533)	0.023* (2.318)
Nearness to market	-0.677*** (-4.702)	-0.217*** (-3.875)	0.658 (0.234)	0.001 (-0.379)
Farm size	-0.442 (-0.423)	-0.654*** (-4.139)	-3.547 (-0.442)	0.004 (-0.174)
Value of output	1.240E-8 (0.005)	0.043* (1.697)	0.115 (0.089)	5.457 (1.089)
R <sup>2</sup>	0.683	0.719	0.442	0.450
F-Ratio	2.979	67.000***	8.196***	1.625*

Source: computed from field survey data (2014)

\*\*\*, \*\*, \* = significant at 1%, 5% and 1% probability level

Land size (farm size) indicates the potential to produce surplus for the market [19]. Also, membership of associations and groups possess the potentials of increased access to information important to production and marketing decisions [5]. However, value of output and experience are positively signed and significant at 10% and 1% probable level respectively. This implies that any increase in these two variables will lead to a corresponding increase in cassava production and subsequently greater income for the

cassava households. This result is in line with *a priori* expectation and in line with the results posted by [4].

## CONCLUSIONS

Having assessed the factor affecting commercialization among cassava producing households, it is glaring that on the average, cassava producing farmers lacks the required inputs necessary for increase cassava production and commercialization. This is because; rural cassava producing farmers are subsistence farmer, in order words their products are consumed most by their households. The result indicates that only less than 2% of the farmers are highly commercialized, which exposes to level of farming practice in the study. Therefore, in order to sustain and improve the productivity among farming household, the need to review land tenure policy issues, labour and capital cannot be over emphasized. For instance, most of the productive agricultural areas in Nigeria are under cultivation. Developing strategies to increase the value of agricultural production per unit of land is a top priority. On a general level, this study recommends support policies for farmers in the rural areas; linkages between farm households and the markets; increase access and exchange of information on markets. From evidence, women are much more involved in cassava production than their male counterparts. Therefore, men should also be encouraged to be involved in order to ensure greater productivity.

## REFERENCES

- [1] Abia State Government (ABSG), 1992, Abia in Brief. Published by the Abia State Government Press, Government House, Umuahia. Pp. 1 – 3.
- [2] Afolabi, J. A., 2009, An Assessment of Garri Marketing in South Western Nigeria. Journal of Social Science 21(1) 33-38
- [3] Agwu, A. E., Dimalu, M. U., Madukwe, M. C., 2008, Innovation System Approaches to Agricultural Development: Policy Implementation for Agricultural Extension Delivery in Nigeria, African Journal of Biotechnology, 7(ii)
- [4] Agwu, N.M., 2009, Determinants of profitability among plantain marketers in Abia State, Nigeria. The Nigerian Journal of Development Studies, 7(1): 49–58

- [5] Agwu, N. M., Anyanwu, C. I., Mendie, E. I., 2013, Socio-Economic Determinants of Commercialization among Smallholder Farmers in Abia State, Nigeria. *Greener Journal of Agricultural Science*, 2(8)392-397
- [6] Bamidele, F. S., Babatunde, R.O. and Ajao R., 2008, Productivity Analysis of Cassava-Based Production Systems in the Guinea Savannah: Case Study of Kwara State, Nigeria. *American-Eurasian Journal of Scientific Research* 3 (1): 33-39, 2008
- [7] Cassava Master Plan, 2006, A strategic Action Plan for the development of the Nigerian Cassava industry, Prepared By The United Nations Industrial Development Organization In Cooperation With The Ministry Of Trade And Industry And The Presidential Initiative On Cassava
- [8] Ezebuiro, N. O., Chukwo, G. O., Okoye, B. C., Oboajigs, I. C., 2008, Policy Issue and Adoption of Improved Cassava Varieties. Gender Consideration in Umuahia Zone of Abia State, pp. 1056-1059
- [9] Ezedinma C.I., Kormawa, P., Adekunle, A., Okechukwu, R., 2002, Linking producers to the market: the RUSEP Approach. Paper presented at the international workshop on cassava competitiveness in Nigeria, November 18-22, 2002, IITA, Ibandan.
- [10] FAO (Food and Agricultural Organisation), 2000, *The State of Food Insecurity in The World*. Food and Agricultural Organisation of the United Nations.
- [11] FAO (Food and Agricultural Organisation), 2011, *A Cassava Industrial Revolution in Nigeria*. [www.fao.org/doi/ep007/y5548e/y5548e0b.htm](http://www.fao.org/doi/ep007/y5548e/y5548e0b.htm) (Accessed on January 8, 2014)
- [12] Federal Ministry of Agriculture and Rural Development (FMARD), 2006, National Programme for Food Security, Expansion Phase Project 2006 (2010) (Main Report)
- [13] Govereh, J., Jayne, T.S., Nyoro, J., 1999, *Smallholder Commercialization, Interlinked Markets and Food Crop Productivity: Cross Country Evidence in Eastern and Southern Africa*, the Department of Agricultural Economics and the Department of Economics, Michigan State University, June 1999. Available on: [www.aec.msu.edu/fs2/ag\\_transformation/atw\\_govereh.pdf](http://www.aec.msu.edu/fs2/ag_transformation/atw_govereh.pdf), [Accessed on 20.09.12]
- [14] International Institute for Tropical Agriculture (IITA), 2009, Yam production in Africa. International Institute of Tropical Agriculture (IITA), Nigeria. Available from [http://www.iita.org/cms/details/yam\\_project\\_details.aspx?zoneid=63&articleid=268](http://www.iita.org/cms/details/yam_project_details.aspx?zoneid=63&articleid=268). (Accessed on April 2009)
- [15] Immink MDC., Alarcon JA., 1993, Household income, food availability, and commercial Crop Production by Smallholder Farmers in the Western Highlands of Guatemala. *Economic Development and Cultural Change* 41(2):319-342.
- [16] Jaleta, M., Gebremedhin, B., Hoekstra, D., 2009, *Smallholder Commercialization: Processes, Determinants and Impact*. Discussion Paper No. 18. Improving Productivity and Market Success (IPMS) of Ethiopian Farmers Project, ILKRI, Nairobi, Kenya. 55pp
- [17] Mwakalobo, A. B. S., 2000, Resource Productivity and Allocation Efficiency in Smallerholder Coffee Farmers in Rugwe District, Tanzanian. Paper Published in the AGREST Conference proceeding series volume 4.
- [18] Onoja, A. O., Ibrahim, M. K., Achike, A. I., 2010, Econometric Analysis Of Credit And Farm Resource Technical Efficiencies' Determinants In Cassava Farms In Kogi State, Nigeria: A Diagnostic And Stochastic Frontier Approach.
- [19] Martey, E., Hassan, R. M. A., Kuwornu, J. K. M., 2012, Commercialization of Smallholder Agriculture in Ghana: A Tobit regression analysis. *African Journal of Agricultural Research* Vol. 7(14), pp. 2131-2141, 12 April, 2012 Available online at <http://www.academicjournals.org/AJAR> DOI: 10.5897/AJAR11.1743
- [20] National Population Commission (NPC), 2007, Details of the breakdown of the National and State Provincial Population Totals 2006 Census. National Population Commission, Federal Republic of Nigeria Official Gazette 24(94):1 – 26
- [21] Nto, P. O. O., Ekeagwu, I. C., Azubuike, I., 2013, Evaluation of Risk Management Strategies Among Garri Producers in Abia State, Nigeria. *The Nigerian Agricultural Journal* 44(1&2): 164-175
- [22] Nwajiuba, C.U., 2013, Nigeria's Agriculture and Food Security Challenges. Accessed from [www.ng.boell.org/...agriculture\\_-\\_green\\_deal\\_nigeria\\_study.pdf](http://www.ng.boell.org/...agriculture_-_green_deal_nigeria_study.pdf)
- [23] Nweke, F., Haggblade, S., Zulu, B., 2004, Building On Successes In African Agriculture: Recent Growth in African Cassava. International Food Policy Research Institute [www.ifpri.org](http://www.ifpri.org)
- [24] Olomola, A. S., 2007, "Strategies for Managing the Opportunities and Challenges of the Current Agricultural Commodity Booms in SSA" In Seminar Paper on Managing Commodity Booms in Sub-Saharan Africa: A Publication of the AERC Senior Policy Seminar IX: African Economic Research Consortium (AERC) Nariaobi, Kenya
- [25] Omonona, B. T., 2009, Efficiency of resource - use in cassava production in Kogi State, Nigeria: implications for food security and environmental degradation. Retrieved on 27th April, 2009 from <http://www.cababstractsplus.org/abstracts/SearchResults>.
- [26] Olwande, J., Mathenge, M., 2010, Market Participation among the Poor Rural Households in Kenya. Tegemeo Institute of Agricultural Policy and Development.
- [27] Omiti J. M., 2009, Factors Affecting the Intensity of Market Participation by Smallholder Farmers: A Case Study of Rural and Peri-urban Areas of Kenya. *African Journal of Agricultural and Resource Economics* 3(1):57-82
- [28] Rahut, D.B., Castellanos, I.V., Sahoo, P., 2010,

Commercialization of Agriculture in the Himalayas, Institute of Developing Economies, IDE Discussion paper no. 265.

[29]Sanni L. O., Onadipe, O.O., Ilona, P., Mussagy, M.D., Abass, A., Dixon, A.G.O., 2009, Successes and challenges of cassava enterprises in West Africa: a case study of Nigeria, Bénin, and Sierra Leone: International Institute of Tropical Agriculture (IITA).

[30]Strasberg P.J, Jayne, T. S., Yamano, T., Nyoro, J., Karanja, D., Strauss J., 1999, Effects of Agricultural Commercialization on Food Crop Input Use and Productivity in Kenya. Michigan State University International Development Working Papers No. 71. Michigan, USA.

[31]Ume, S. I., Uloh, V. E., Ochiaka, J. S., 2013, Socio-Economic Determinants of Cocoyam Production in Anambra State, Nigeria. The Nigerian Agricultural Journal, 44(1&2):276-288

[32] Von Braun J., Bouis, H., Kennedy, E., 1994, Conceptual framework. In: von Braun J and E. Kennedy (eds), Agricultural Commercialization, Economic Development, and Nutrition. Johns Hopkin University Press, Baltimore, Maryland, USA. pp. 9 – 33.

[33]Westby, A., 2008, Cassava Utilization, Storage and Small-scale Processing. In R. Hillock, J. Thresh, & A. C. Bellotti, eds., Cassava Biology, Production and Utilization. CABI Publishing.