(RESEARCH ARTICLE)

Trends in financing crop production under selected policies, programmes and schemes in Nigeria (1980-2016)

Nnamdi Ogechukwu Aruocha [1, *], Michael Uchendu Agunannah [1] and Kingson Njoku [2]

[1] Department of Agricultural Technology, Akanu Ibiam Federal Polytechnic Unwana, Nigeria.
[2] Department of Criminal Justice Administration and Emergency Management, Colorado State University Global, Aurora, Colorado.

Abstract

The study analyzed trends in financing crop production under financing policies of programmes, institution and schemes in Nigeria from the period 1980- 2016. Specifically the study analyzed the trend in growth rates of selected agricultural financing policies such as the Agricultural Credit Guarantee Scheme Fund (ACGSF) and Agricultural Development Programme (ADP) and crop output; and compared the funds provided by these selected agricultural financing policies. Data were analyzed using trend analysis and z- test, The study showed that crop output and funds provided for crop production under ACGSF and ADP increased overtime within the reference period and were all significant at $p<0.01$ level. The study shows a compound growth of 5.3% per annum for crop output, 1.8% per annum for ACGSF, and 1.2% per annum for ADP. The study also showed that the growth in crop output and in the financing polices of programmes, institution and schemes were slow. ACGSF significantly allocated more funds for crop production than were done under ADP within the reference period. The study recommends that government should enhance the growth in crop output by ensuring rapid and sustained increase in the allocation of credit for crop production through financing policies of schemes, institutions and programmes. Efforts must be geared towards ensuring that a healthy balance is strike by governments' financing of crop production through institutions, programmes and schemes.

Keywords: Financing; Crop Production; Agricultural Credit Guarantee Scheme Fund; Agricultural Development Programme

1. Introduction

The relevance of agriculture is seen in its immense contribution towards the growth of the Nigeria economy through provision of food for the increasing population, account for 70% of total employment, 40% of total exports, and one-third of GDP, supply of adequate raw materials to the growing industrial sector, generation of foreign exchange earnings, and, provides market for products from agrarian sector (Okezie et al 2012; Nnamerenwa, 2012). Nigeria policy strategy was for agriculture to be used to enhance economic growth (Manyong *et al*. 2003). This is because agriculture traditionally provides a sustainable pathway to economic growth alongside the industrial sector.

Several policies have been formulated by both past and present government of Nigeria to see to the revitalization and sustenance of the sector. This is important considering the role the agrarian sector plays in food production and food security. Agriculture sector before the oil boom contributed 63 and 54 percent to GDP in the 50s and 60s respectively (Aigbokhan, 2001). The sector's share in gross domestic product though fell in the post oil boom period, maintained yet persistent increase. For instance between 1970 and 1980, the share of agriculture in real gross domestic product

* Corresponding author: Aruocha Nnamdi Ogechukwu

(RGDP) in Nigeria averaged 29.2%, it was 33.3% between 1980 and 2000, 41.2% between 2001 and 2009, and 21.32% between 2010 and 2017 (Central Bank of Nigeria, 2018). The aftermath of such decline in granting financial support to the agricultural sector is that Nigeria has lost her identity as a net exporter of agricultural produce (majorly crops) to a large-scale importer of the same commodities during the period since 1973 till now.

The current level of crop output in Nigeria nowadays has raised a lot of concern as to the food security of the nation considering that the crop sub-sector of the agricultural sector prior now constitutes about 65% of the total contribution of the agricultural sector to GDP (Mbanasor, 2017). There has been a consistent fluctuation in crop production level while the share of agriculture in GDP declined. Under such circumstances, food imports and foreign exchange disbursements on such imports are bound to increase tremendously (Nnamerenwa, 2012). Food security issues started to emanate in the 1970s when it became apparent that the agricultural sector could no longer perform its assumed roles (Mejeha, 2001). This became more pronounced with the rapid decline in exports of major agricultural commodities and shortage in domestic food supply. The dismal performance of the crop sub-sector was as a result of many disincentives. A typical case of such disincentive is the paucity of financial support which the sub-sector necessarily needs. Thus, allocation of credit to farmers for crop production purposes is a major factor in determining total production and to ensure an increase in productivity (Odoemenem and Obinne, 2010).

Agriculture financing policy is defined as a development strategy which promotes agricultural investment and adoption of improved technologies necessary to enhance the economic growth... Implementation of agricultural financing policies however is moderated by macro-economic policies that provides conducive environment for agriculture to grow laterally with other sectors (Uche, 2011). Some of such impressive policies includes the Agricultural Credit Guarantee Scheme Fund (ACGSF) established in 1978 and the Agricultural Development Programme (ADP) established in 1975 (Eze *et al* 2010; Nwosu, Oguoma, Ben-Chendo and Henri-Ukoha, 2010). These schemes were established to provide credit support to farmers.

Poor financing of the crop production hampers agricultural development. Prior to the structural adjustment era, there was consistent increase in the lending portfolios of banks to the farmers but at concessionary rates. The agricultural lending was considered riskier, problematic and unprofitable relative to other sectors. The advent of deregulation however, erased the idea of concessionary lending by banks. FMARD (2016), in their reports revealed that Bank credit to agricultural sector in nominal terms, over the years have increased from about ₦230 million (then about $233 million) in 1978 to ₦262 billion ($2.23 billion) in 2005 (CBN 2007), to over ₦398 billion 2015. However, the growth rate of investment in agriculture is less compared with than in other economic sectors in Nigeria.

Reports shows that Gross Domestic Product (GDP) of Nigeria agriculture has continued to decline drastically (NEEDS, 2004). This indeed is worrisome considering the number of agricultural schemes, institutions and programmes which have been introduced by government to boost agricultural productivity in Nigeria such as Agricultural Credit Guarantee Scheme Fund (ACGSF), Agricultural Development Programme (ADP), among others. Therefore, against this backdrop that this study analyzed the credit allocation and trend in financing crop production under financing policies of programmes and schemes in Nigeria from the period 1980- 2016, and the specific objectives of the study are to analyze the trend in growth rates of crop production and of agricultural financing policies of schemes, programmes and institutions and compare the difference in the mean value of loan made available for crop production under agricultural financing policies of schemes, programmes and institutions in Nigeria within the reference period.

2. Material and methods

The study was conducted in Nigeria. The country is situated in tropical Sub-Saharan Africa along the Gulf of Guinea and is one of the largest countries on the continent. Nigeria lies between latitudes 4° and 14° north of the Equator and between longitudes 3° and 15° east of the Greenwich Meridian (Akpan, 2010). The country is bounded on the west by the Republic of Benin, on the east by the Republic of Cameroon, on the north east by the republic of Chad and on the North-west by the Niger Republic. The Atlantic Ocean forms the southern boundary of the country. Nigeria has a total land area of 923,768.622km² or about 92.4 million hectares, made up of land: 910,768 sq km and water: 13,000 sq km. The country's population is currently put at 193 million with an annual growth rate of 3.2 percent (National Bureau of Statistics NBS, 2017). Agriculture is a major occupation in Nigeria. About 60 percent of the population is involved in agricultural production. The major food crops produced in Nigeria are: cassava, maize, rice, yams, various beans and legumes, soya, sorghum, ginger, onions, tomatoes, melons and vegetable. Cash crops produced in the country include: cocoa, cotton, groundnuts, palm oil and rubber. Nigeria has 19 million head of cattle, the largest in Africa. The sector contributed about 17.8 percent of the GDP of the country in 2015 (NBS, 2016). The variety of customs, languages, and traditions among Nigeria's 250 ethnic groups give the country a rich cultural diversity. This study made use of secondary data, mostly time series data on many variables covering the period 1980-2016. Crop output, credit allocation for crop

production under ACGSF and ADP were collected from the publications of the Central Bank of Nigeria (CBN) such as Statistical Bulletin and Annual Reports and Statement of Account; National Bureau of Statistics (NBS), and Annual Abstract of Statistics. Data analysis involved the use of econometric tools. Trend in growth rates of selected agricultural financing policies, and crop production in Nigeria for the period under reference was realized using exponential time trend analysis, while difference in the mean values of funds made available for crop production under the selected agricultural financing policies in Nigeria was realized using z-test. The crop commodity considered in the study included maize, millet, sorghum, rice, wheat, acha, beans, cassava, potato, yam, plantain and vegetables, groundnut, cotton, rubber, oil palm and cocoa. The Agricultural Credit Guarantee Scheme Fund (ACGSF) was used as proxy for agricultural financing policies through schemes while Agricultural Development Programme (ADP) was used as proxy to agricultural financing policies through programmes.

2.1. Model specification

The time trend analysis which was used to analyze the trend in growth rates of selected agricultural financing policies, crop production in Nigeria for the period 1980 – 2016 is specified in line with Onyenweaku, (2004), Nnamerenwa, (2012); Onyebinama and Nnamerenwa, (2013) and Onwumere, Ene and Nnamerenwa (2017) as:

$$Y_{it} = \exp^{(\beta_0 + \beta_i + e_i)} \quad \text{...} (1)$$

When Linearized, becomes

$$\text{Log} Y_{it} = \beta_0 + \beta_1 T_i + e_i \quad \text{..} (2)$$

Where;

Log = natural Logarithm; Y_{it} = dependents variable whose growth is measured. Where i represents (1) Selected agricultural financing policies proxy by Agricultural Credit Guarantee Scheme Fund (ACGSF) and Agricultural Development Programme (ADP) measured in millions of naira in period t.(2) Aggregate output of crops (Grain Equivalent) in period t. T = Time trend variable (years); β_0 and β_1 = Parameters to be estimated; e_i = Error term.

The annual exponential compound growth rate in agricultural financing policies, crop production in period t was estimated in line with Onyenweaku, (2004) and Nnamerenwa, (2012) as:

$$r = (e^{\beta_1} - 1) \times 100 \quad \text{..} (3)$$

Where;
e_i = Euler exponential constant (e =2.71828)
β_1 = estimated coefficient in equation (2).

The time it took to double the rate of growth was then estimated in line with Nnamerenwa (2012); Onyebinama and Nnamerenwa (2013) and Onwumere, Ene and Nnamerenwa (2017) as:

$$DR_t = \frac{\log(2)}{\log(1 + \frac{r}{100})} \approx \frac{70}{r} \quad \text{..............................} (4)$$

Where DR_t = doubling time, and r = compound rate of growth computed in eq. (2) for each of the agricultural financing policies and crop output. The paired sample z-test of difference in means that was used to compare the difference in the mean value of funds provided under the selected agricultural financing policies in Nigeria within the reference period is fitted in line with Nnamerenwa (2012) and Onyebinama and Nnamerenwa, (2013) as:

$$Z_{cal} = \frac{X_{ij} - X_{j*k}}{\sqrt{\frac{S^2 X_{ij}}{n_{ij}} + \frac{S^2 X_{j*k}}{n_{j*k}}}} \quad \text{...}(5)$$

Where;
X_{ij} = mean of value of loans made available for crop production under ACGSF;
X_{j*k} = mean of value of loans made available for crop production under ADP;
$S^2 X_{ij}$ = variance for value of loans made available for crop production under ACGSF;
$S^2 X_{j*k}$ = variance for value of loans made available for crop production under ADP;

$n_{i\,j}$ = number (years) of value of loans made available for crop production under ACGSF;
n_{j*k} = number (years) of value of loans made available for crop production under ADP;
∗ Means that pair J-J was not permitted.

---

3. Results and discussion

The estimated trend in the growth rate in time variable for Agricultural Crop Output, Agricultural Credit Guarantee Scheme Fund and Agricultural Development Programme fund was computed and the result was presented in Table .1.

Table 1 Estimated trend equations for Crop Output, ACGSF fund and ADP Fund (1980 – 2016)

Variable	B_0	B_1	r^2	Adj. r^2	F-ratio
$COPT_t$	2.266 (330.044)***	0.053 (16.046)***	0.880	0.877	257.471***
$ACGSF_t$	2.204 (124.668)***	0.018 (20.986)***	0.926	0.924	440.425***
ADP_t	2.186 (98.048)***	0.012 (8.473)***	0.897	0.894	305.301***

Source: Generated data from various issues of ADP, NBS and FAOSTAT (1980 -2016); Note: Asterisk *** represent 1% level of significance. Figures in brackets are t-ratios. ACGSF= Agricultural Credit Guarantee Scheme Fund; ADP = Agricultural development programme

The result in Table 1 showed that the coefficients of the time variable for agricultural crop output was positive and statistically significant at 1%, indicating an increase in agricultural crop production overtime in Nigeria within the reference period. Thus, time variable was a major factor in determining the values of agricultural crop output in Nigeria. Therefore, value of agricultural crop output responds to changes in time by either increasing or decreasing overtime. The coefficients of simple determinations (r^2) for agricultural crop output ($COPT_t$) was 0.880, implying that 88%, of the variations in $COPT_t$, was explained by the time variable. This simply infers that agricultural crop output was highly time dependent within the reference period.

Furthermore, the result in Table1 shows that the coefficients of the time variable for Agricultural Credit Guarantee Scheme fund (ACGSF) and Agricultural Development Programme (ADP) were positive and statistically significant at 1% level respectively. This further implies that time was a major factor in determining the values of $ACGSF_t$ and ADP_t in Nigeria (i.e. values of $ACGSF_t$, and ADP_t responded to changes in time by increasing in values overtime). Thus, indicating an increase in financial allocation by Agricultural Credit Guarantee Scheme fund (ACGSF), and Agricultural Development Programme (ADP) for crop production in Nigeria within the period under study. The coefficients of simple determinations (r^2) for the three variables $ACGSF_t$ and ADP_t were 0.926 and 0.897 respectively, an indication that 92.6% and 89.7% variations in $ACGSF_t$ and ADP_t respectively was explained by the time variable. This indicates that the variables were highly time dependent within the reference period.

Table 2 Compound growth rates of the Agricultural Crop Output, ACGSF, BOA and ADP in Nigeria (1980 -2016)

Variable	Parameter (β)	Exponential growth rate (r)
$COPT_t$	0.053***	5.3
$ACGSF_t$	0.018***	1.8
ADP_t	0.012***	1.2

Source: Computed by the author from the estimated coefficients of the trend variables in Table 4.1; *** represent 1% significance level. ACGSF= Agricultural Credit Guarantee Scheme Fund; ADP = Agricultural development programme

The result of the computed compound growth rate analysis in Table 2 shows that crop output maintained a positive growth rate within the period under review and recorded a compound growth rate of 5.3% per annum. Similar studies on crop production growth rate by Onyenweaku and Okoye (2005), and Ojiako *et al* (2007) revealed compound growth rates of 4.17% and 4.36% respectively, between the periods 1960/1961 - 2004/2005 respectively. Table.2 showed that the compound growth rate of $ACGSF_t$ and ADP_t maintained a positive growth rate within the period under study and recorded a compound growth rate of 1.8% per annum for Agricultural Credit Guarantee Scheme Fund (ACGSF) and

1.2% per annum for Agricultural Development Programme (ADP). Similar studies on credit allocation under ACGSF for agricultural crop production have revealed a compound growth rate of 25.5% during the 1978 – 2009 periods (Nnamerenwa, 2012). There is a sharp drop in the value of loan allocated for crop production under the ACGSF between 1980 and 2016. Nnamerenwa (2012) posited that credit allocation under ACGSF for agricultural crop production had a compound growth rate of 25.5% between 1978 and 2009 which is 32 years interval, however our study revealed a whooping drop in the value of ACGSF credit allocation to crop sector. The value of ACGSF credit allocated for crop production had a compound growth rate of 1.8% per annum between 1980 and 2016 which is 37 years interval. This indicates that the volume of credit allocation for crop production under the ACGSF in the earlier days is much more than in the later years. This may be due to the increase in the number of farmers seeking such loans and the decrease in the volume of credit to satisfy the credit needs of the farmers. Access to credit is the motive for implementing extensive credit rationing and increase in access to credit with limited availability of credit will culminate into small loan sizing (Nnamerenwa, 2012). The very slow rate of increase in the compound growth rate of funds provided for crop production under the Agricultural Development Programme (ADP) is an indication that the programmes is going moribund and offers no hope for the future of crop production in Nigeria. This may be due to negligence and poor funding of farmers under the programmes.

Table 3 Doubling time (Years) of the Compound growth rates of Agricultural Crop Output, ACGSF and ADP in Nigeria (1980 -2016)

Variable	Parameter (β)	Exponential growth rate	Doubling time of growth rate
$COPT_t$	0.053***	5.3	13.42
$ACGSF_t$	0.018***	1.8	38.85
ADP_t	0.012***	1.2	58.11

Source: Computed by the author from the computed compound growth rate (r) in Table above. *** represent 1% significance level. **ACGSF=** Agricultural Credit Guarantee Scheme Fund**; ADP =** Agricultural development programme.

The doubling time in the compound growth rate **of** Agricultural Crop Output, Agricultural Credit Guarantee Scheme Fund (ACGSF) and Agricultural Development Programme (ADP) in Nigeria (1980 -2016) was measured using the doubling time formula in line with Nnamerenwa (2012). The result in Table 3 shows that it will take at least thirteen years, four months and two days to double the rate of growth in Agricultural Crop Output in Nigeria based on the current trend. The time is widening away from the doubling time recorded by Onyebinama and Nnamerenwa (2013) of 10 years and 3 months within the 1978 -2009 period of their study. This suggests that not much have been done between 2010 and 2016 to rescue the agricultural sector as the sector continues to struggle to keep pace with the food need of the people of Nigeria. This will continue to encourage food importation into the country to supplement domestic food production. Therefore, there is need for research intensification in order to improve crop production technologies significantly in a way that the rate of growth will achieve the needed self- sufficiency in food production not later than the year 2030.Table 3 also shows that it will take at least thirty-eight years, eight months and 5 days to double the rate of growth in value of credit allocated to crop sector for crop production under ACGSF in Nigeria based on the current time trend. This doubling time is so widened from the doubling time recorded by Onyebinama and Nnamerenwa (2013) of 2 years and 7 months within the 1978 -2009 period of their study. This suggests that funding of crop production under ACGSF between 1980 and 2016 is on the decrease, a pointer to the negligence of agricultural funding policies of the government. For the Agricultural Development Programme (ADP) variable, the result in Table 3 shows that it will take at least fifty-eight years, one month and one day to double the rate of growth in value of credit allocated to crop sector for crop production under ADP in Nigeria based on the current time trend. This time frame is so far enough and indicates the weakness in crop production funding under ADP. There is therefore a need to structure ADP in Nigeria and policies that is aimed at increasing crop production in Nigeria through ADP must consider the funding policies of crop production under the ADP as a critical factor in achieving such objective.

Evidence from the z-test result presented in Table 4. showed that on the average for all the paired categories, the mean value of funds allocated for crop production by Agricultural development programme (ADP) and Agricultural Credit Guarantee Scheme Fund (ACGSF) were approximately ₦788,031.08, and ₦2,093,582.58 respectively. There was significant difference in the mean value of funds between Agricultural Credit Guarantee Scheme Fund and Agricultural Development Programme (z = 4.067) in the period under review. This indicated that volume of funds disbursed for crop production under the Agricultural Credit Guarantee Scheme Fund (ACGSF) was significantly higher than that disbursed under the Agricultural Development Programme. The disparity in the value of funds made available for crop production in Nigeria under schemes, programme and institutions may be attributed to the unbalanced budgetary allocations given to their agencies by the federal government. Political instability, poor finance policy implementation and corruption

might contribute to the poor financing of crop production witnessed under the Agricultural Development Programme and Agricultural Credit Guarantee Scheme Fund. Thus, there is significant disparity in financing crop production under schemes, programmes and institutions in Nigeria. Institutional financing of crop production in Nigeria made funds more available to crop farmers than under schemes and programmes.

Table 4 Test of significance of the difference between the mean values of funds provided for crop production under ACGSF and ADP in Nigeria (1980 – 2016)

Sample	Mean	Standard Deviation	Standard Error Mean	Df	z-statistic
[a]ADP	788,031.08	870,370.74	143,088.07		
[b]ACGSF	2,093,582.58	2,823,105.87	464,115. 75		
a –b	1,305,551.50	1,952,735.13	321,027.68	36	4.067***

Source: Generated data from various issues of BOA, ADP and CBN statistical bulletin (1980 -2016); Note: *** represent 1% significance levels respectively. a -b represents paired sample differences between ADP = Agricultural development programme and ACGSF= Agricultural Credit Guarantee Scheme Fund

4. Conclusion

The study on the credit allocation and trend in financing crop production under financing policies of programmes, institution and schemes concludes that agricultural crop output is highly time dependent within the reference period, an implication that time was a major factor in determining the values of Agricultural Credit Guarantee Scheme fund and Agricultural Development Programme in Nigeria. Agricultural Credit Guarantee Scheme fund and Agricultural Development Programme responded to changes in time by increasing in values overtime. The financial allocation by Agricultural Credit Guarantee Scheme fund and Agricultural Development Programme for crop production in Nigeria increased within the period under study yet the rate of Crop production were slow as output is far below current demand. Notwithstanding, funding from Agricultural Credit Guarantee Scheme fund and Agricultural Development Programme for crop production is far below what is expected to translate production into efficient and increased output. Agricultural credit guarantee scheme fund disburses more funds for crop production than agricultural development programme. Average growth rate in crop output and selected financings policies was low in the country. It is recommended that government should enhance growth in crop output by ensuring timely allocation of funds through the selected financing schemes, institutions and programmes to the agricultural sector. Government should also sustain agricultural financing polices schemes, programmed and institutions so as to continue to increase crop production and guarantee food security in the country.

Compliance with ethical standards

Disclosure of conflict of interest

No conflict of interest to be disclosed.

References

[1] Aigbokhan B.E. (2001), Resuscitating Agricultural Production for Exports. Cited In CBN Proceedings of the 10th Annual Conference of the Zonal Research Units.

[2] Akpan E.O (2010). Effect of exchange rate movements on economic growth in Nigeria. CBN Journal of applied statistics Vol. 2 No.2, University of Ibadan.

[3] Central Bank of Nigeria (2017). Annual Report and Statement of Account. Abuja, Nigeria.

[4] Central Bank of Nigeria (2007). Agricultural Credit Guarantee Scheme Fund of Nigeria (ACGSF): An Impact Assessment. A Research Report Conducted by Centre for Resource Analysis and Management for the Governing Board of the ACGSF, Abuja.

[5] Eze, C.C. Lemchi J.I., Ugochukwu A.I, Eze V. C., Awulonu C.A.O and Okon A.X (2010). "Agricultural Financing Policies and Rural Development in Nigeria" The 84thAnnual Conference of the Agricultural Economics Society, 29th to 31st March 2010.

[6] Federal ministry of agriculture and rural development (2016). Agricultural Promotion Policy (2016-2020), Building on the Successes of ATA, Closing Key Gaps. Policy and Strategy Document, Retrieved from http://www.fmard.org/file1/template/017/pdf/2016;nigeria-agric-sector-policy-road-june-15-2016-final1.pdf

[7] Manyong V.M, Ikpi, A., Olayemi, J.K., Yusuf, S.A., Omonona, R., Idachaba, F.S (2003). Agriculture in Nigeria: Identifying Opportunities for Increased Commercialization and Investment. International Institute Tropical Agriculture USAID-NIGERIA

[8] Mejeha, R.O. (2001). Institutional Financing of Agricultural Production in Nigeria: Problems and Policy Issues. Proceedings of the 35th Annual Conference of the Agricultural Society of Nigeria held at University of Agriculture, Abeokuta, Nigeria on Sept.16-20, 2001: 258- 265.

[9] Mbanasor, J. A (2017). Effects of interest rate volatility on formal agricultural financing in Nigeria within 1986 and 2016. Nigeria journal of agribusiness and rural development, vol. 7(2):23-31

[10] NEEDS (2004), National Economic Empowerment and Development Strategy (Vol. 2), International Monetary Fund, National Planning Commission, Federal Secretariat, Abuja.

[11] NBS (2016). Key Indicators. Available at http://www.nigerianstat.gov.ng/(Accessed on 25 June 2016)

[12] NBS (2017). Demographic statistics bulletin. Available at http://www.nigerianstat.gov.ng/ (Accessed on 25 May 2019)

[13] Nnamerenwa, G.C. (2012). Analysis of Intra-Sectoral Credit Allocation under the Agricultural Credit Guarantee Scheme Fund in Nigeria (1978 – 2009). M.Sc. Thesis, Department of Agricultural Economics, Michael Okpara University of Agriculture Umudike, Abia State, Nigeria.

[14] Nwosu, F.O., Oguoma,N.N.O. Ben-Chendo,N.G. and Henri-Ukoha,A. (2010), The Agricultural Credit Guarantee Scheme: Its Roles, Problems and Prospective in Nigerian's Quest for Agricultural Development. Researcher 2(2):1 -4.

[15] NPC. (2015) National population commission –Nigerian Population census report

[16] Odoemenem, I. U., and Obinne, C. P. O. (2010). Assessing the Factors Influencing the Utilization of Improved Cereal Crop Production Technologies by Small-scale Farmers in Nigeria. Indian Journal of Science and Technology, 3(2), 180-183.

[17] Okezie C. A, Sulaiman J, Nwosu A.C (2012). "Farm –Level Determinants of Agricultural Commercialization". International Journal of Agriculture and Forestry 2012, 2(2): 1-5

[18] Ojiako, L.A., Asumugba, C. E and UzokwE, N.E (2007).Analysis of production trends in the major root and tuber crops in Nigeria, 1961-2005. Research on crops, 8(2):371-380

[19] Onwumere, J.C., Ene, C.H. and Nnamerenwa, G.C. (2017). Government credit, banks' credit and agribusiness sector performance under consolidation policy in Nigerian banking institutions (1995-2014): A trend analysis. Scientific Papers Series Management, Economic Engineering in Agriculture and Rural Development, 17(1):307 -316.

[20] Onyebinama U.A.U. and Nnamerenwa G.C. (2013). Comparative analysis of credit allocation to crop and livestock subsectors under the Agricultural Credit Guaranteed Scheme Fund (ACGSF) in Nigeria. The Nigerian Agricultural Journal. 44(1&2), 135 -145.

[21] Onyenweaku, C.E., (2004), Stagnation, Acceleration and Deceleration in Agricultural Production in Nigeria, 1970-2000. Journal of Agriculture and Food Science 2(2): 131-140.

[22] Onyenweaku, C.E. and Okoye, B.C (2005). Trends in Cassava Output, Area and Productivity in Nigeria, 1960/61-2003/04. Proceedings of the 39th Conference of the Agricultural Society of Nigeria, Benin.

[23] Onyenweaku, C.E., Okoye, B.C., Asumugha, G.N., Okezie C.A. and Tanko, L. (2008), Economic Assessment of the Trend in Cocoyam Production in Nigeria, 1960/61 -2006. Medwell Agricultural Journal, 3(2): 99 -101.

[24] Uche, I P (2011). The Impact of Agricultural Policies on Nigerian Economy. A Thesis Submitted to the Department of Public Administration and Faculty of Social Science, University of Nigeria, Nsukka