NOVATEUR PUBLICATIONS
INTERNATIONAL JOURNAL OF INNOVATIONS IN ENGINEERING RESEARCH AND TECHNOLOGY
[IJIERT] ISSN: 2394-3696 Website: ijiert.org
VOLUME 8, ISSUE 6, June. -2021

AGRICULTURE AS A TOOL FOR FOOD SECURITY IN NIGERIA

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ABSTRACT
This study is on agriculture as a tool for food security in Nigeria. The specific objective of the study is to examine the significant impact of government expenditure on agriculture (GEA), bank loans and advances to cash crops farmers, livestock farmers, fishery farmers, food crops farmers on agricultural output /food security in Nigeria. The study uses the ex-pecto research design and the ordinary least square (OLS) regression analysis as a method of data analysis. The findings reveals that shows that government expenditure on agriculture (GEA) and Bank loans and advance to cash crops production (LCC) has significant economic impact in agricultural food security, while shows that LFISH, LLIVS and LFC has no significant economic impact on agricultural output/ food security in Nigeria. Among other recommendations, it is recommended that Nigerian government should provide needed financial support and monitoring teams to National Agricultural Systems, Nigerian agricultural and research institutes in order to deliver their core mandate on the farming of livestock, and food crops to have significant impact on agricultural output/ food security in Nigeria.

Keywords: Food security, Livestock, Fishery, National Agricultural Systerm

INTRODUCTION
Federal Republic of Nigeria (FRN), (2017) Nigeria as the most populous country in Africa and the seventh most populous in the world, with an estimated 173 million people in 2013. The population continues to grow at an annual rate of 3.2% as a result of a high fertility rate (5.38 children per woman). Rising population pressure is leading to overcrowding with an estimated population density of 174 people per square kilometre in 2010. The pressure on land and other resources in rural areas is contributing to rapid urban migration, and Nigeria has one of the highest urban growth rates in the world at 4.1%.

Nigeria is made up of over 300 ethnic/linguistic groups. Historically, most of the ethno linguistic groups that constitute the present-day Nigeria existed as autonomous political entities prior to colonization. The country presently operates a federal system consisting of 36 states plus the Federal Capital Territory (FCT) of Abuja. The 36 states are grouped into six distinct geo-political zones - North Central, North East, North West, South East, South South, and South West - which to a great extent reflect ethnic affinity. The states are also divided into 774 local government areas serving as administrative units and a third tier of government.

Despite the economic dominance of the oil industry in Nigeria, it is still by significant measure an agricultural based economy with two-thirds of population dependent on the agriculture sector for employment. However production levels have fallen within the last 20 years with the value-added per capita rising less than 1% annually. There have also been significant losses in Nigeria's export power of key commodities such as groundnut, palm oil, cocoa, and cotton, attributable to several factors (Idris, Olutosin, Sakiru, & Oluwaseun, (2020).

PURPOSE OF THE STUDY

The challenges faced by the sector are based on organizational and governance constraints; the absence of policy clarity at all three levels of government; resource market failure; limited access to improved technologies, technological constraints, poor research and extension services as well as weak linkages with farmers for the uptake of innovations in areas such as seeds and pest and disease control. Furthermore, there are infrastructure inadequacies such as poor road network particularly feeder roads, inadequate markets and storage/processing facilities; as well as inadequate irrigation facilities which limit agricultural production to only the wet season in many parts of the country as such food insecurity remains a challenge in Nigeria.
Recent changes in climate that have led many states to experience delayed rains and/or flooding have hampered agricultural activities, limiting household food stability, also poor processing, storage and preservation techniques also mean that food prices fluctuate depending on the crop, season, and geographic location in the country. The volatility of global food prices have similarly led to increases in the prices of imported foods. Paradoxically, agricultural households have among the highest levels of food insecurity. Indeed, more than 50% of foods consumed in households, including agricultural households, are purchased. With Nigeria's population increasing at an alarming rate of 3.2% per annum, food availability, accessibility, stability and utilization must constantly be increased to prevent food insecurity (Global Food Security Index, 2014). Thus, the major objective of this study is to examine agriculture as a tool for food security in Nigeria from 1990 to 2019, the specific objectives of the study are to examines the significant impact of government expenditure on agriculture, deposit money bank's credit to agricultural farmers on various farming segments on agricultural productivity output in Nigeria hence leading to food security (Atehnkeng, J., Augusto, J., Senghor, L., Bonkoungou, S., Diedhiou, P., Akande, A., Akello, J., Mutegi, C., Cotty, P., & Bandyopadhyay, R. 2015).

METHOD AND MATERIAL

The study uses the ex-pecto research design and the analysis is on the significant impact of government expenditure on agriculture, deposit money bank's credit to agricultural farmers on various farming segments on agricultural productivity output in Nigeria hence leading to food security in Nigeria within a period of 30 years, (ie. from 1990 to 2019). Relevant data was collected from the annual publication of Central Bank of Nigeria Statistical bulletin 2019. We used the panel data regression analysis to analyze the impact of the explanatory (ie. government expenditure on agriculture, bank loans & advance to production of cash crops, livestock, fishery, food crops) variables on the explained variable agricultural productivity output of Nigeria.
AGOUT = f(GEA, LCC, LFISH, LFC, LLIVS)
$AGOUT = \beta_0 + \beta_1 GEA + \beta_2 LCC + \beta_3 LFISH + \beta_4 LFC + \beta_2 LLIVS + \mu t$
Where, AGOUT = Agricultural output, GEA = government expenditure on agriculture, LCC = bank loans & advance to production of cash crops, LFISH = bank loans & advance to production of fishery, LFC = bank loans & advance to production of food crops, LLIVS = bank loans & advance to production of livestock. Bo = Constant, $\beta 1 - \beta 3$ = Co-efficient, μt = error term, A priori Specification: the expected signs of the coefficients of the explanatory variables are:
$b_1 > 0, \ldots b_5 > 0$

RESULT AND FINDINGS

Table 1: Regression Result

Dependent Variable: AGOUT				
Method: Least Squares				
Date: 05/28/21 Time: 15:50				
Sample: 1990 2019				
Included observations: 30				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
LCC	0.012382	0.002957	4.187162	0.0003
LFISH	0.003197	0.004418	0.723502	0.4764
LLIVS	-0.000485	0.001313	-0.369685	0.7149
LFC	0.000572	0.000305	1.878565	0.0725
GEA	5.80E-08	2.25E-08	2.582912	0.0163
C	4410.801	524.9464	8.402384	0.0000
R-squared	0.897353	Mean dependent var		9523.316
Adjusted R-squared	0.875969	S.D. dependent var		5143.942
S.E. of regression	1811.598	Akaike info criterion		18.01866
Sum squared resid	78765291	Schwarz criterion		18.29890
Log likelihood	-264.2799	Hannan-Quinn criter.		18.10831
F-statistic	41.96236	Durbin-Watson stat		1.893477
Prob(F-statistic)	0.000000			

Source: Eviews 9 output 2021.

The above table shows that the R-squared value of RGDP is 0.897353 which shows that 89.7353% variation in dependent variable is explained by the independent variables (GEA, LCC, LFISH, LLIVS, LFC,) in the model. Adjusted R-square (AR) value of coefficient is 0.875969, which shows that 87.60% of the deviation in the dependent variable is expounded by the independent variables of the model. The beta value shows that LCC (0.012382), LFISH (0.003197), LLIVS (-0.000485), LFC (0.000572) and GEA (5.80E-08) this shows that GEA, LCC, LFISH, and LFC has positive economic significant relationship with agricultural output in Nigeria, while LLIVS has negative economic significant relationship with agricultural output in Nigeria. That implies GEA, LCC, LFISH, and LFC are moving in the same direction with AGOUT and LLIVS moves in opposite direction with AGOUT.

On the acceptance and rejection of hypotheses, the regression result reported as follows; GEA (0.0163 > 0.05) and LCC (0.0003 > 0.05) shows that government expenditure on agriculture (GEA) and Bank loans and advance to cash crops production (LCC) has significant economic impact in agricultural food security, while LFISH (0.4764 < 0.05), LLIVS (0.7149 < 0.05) and LFC (0.0725 < 0.05) shows that LFISH, LLIVS and LFC has no significant economic impact on agricultural output/ food security in Nigeria. On the basis of the overall statistical significance of the model, It was observed that the F-statistic of 41.96236 with a probability value of 0.0000 < 0.05 at the 95% confidence interval is indicative of a significant linear relationship between the regressand and the regressors. The Durbin-Watson statistics of 1.893477 is relatively close to 2.00 benchmark which is an indicative of the absence of autocorrelation in the regression residuals.

CONCLUSION AND RECOMMENDATIONS

Conclusively, the findings reveals that government expenditure on agriculture (GEA) and deposit money banks loan and advances to cash crops production (LCC) has significant economic impact in agricultural output and food security, while this deposit money loans and advance to fishery farmers, livestocks farmers,

food corps has no significant economic impact on agricultural output and food security in Nigeria. It is a common wisdom that it is only when Nigerians are food-secure and in good health that they can contribute meaningfully to the growth and develop of the country. The government must ensure that institutional frameworks formulated to improve food security are well strengthened and properly supported financially in its entirety.

It is recommended that the Nigerian government should prioritize the following:

(i) provide needed financial support and monitoring teams to National Agricultural Systems, Nigerian agricultural and research institutes in order to deliver their core mandate on the farming of livestock, and food crops to have significant impact on agricultural output/ food security in Nigeria.
(ii) strengthening policies and programs that can lift people out of extreme poverty
(iii) reduce bottlenecks and proffer solutions to challenges encountered in the smooth running of the N-SIP programs.
(iv) bring an end to the issues of terrorism (Boko Haram), armed conflicts, banditry and Fulani herdsmen crises especially in the northeast and north-central of the country.
(v) effective implementation of agricultural programs and food and nutrition-related interventions especially to the most vulnerable people in the country.

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Table 1: Table of data values for dependent and independent variables

YEAR	AGOUT	LCC	LFISH	LLIVS	LFC	GEA
1990	3,464.72	4,085.60	3,900.70	4,967.30	79,869.60	260000000
1991	3,590.84	4,708.00	1,698.20	4,446.90	64,944.80	210000000
1992	3,674.79	4,984.50	1,038.70	6,056.10	76,260.70	460000000
1993	3,743.67	1,956.90	428.00	5,505.80	70,252.00	1800000000
1994	3,839.68	5,656.40	2,438.00	10,527.90	82,072.40	1180000000
1995	3,977.38	10,987.30	1,512.00	18,048.50	121,067.60	1510000000
1996	4,133.55	13,031.00	2,145.00	28,216.90	171,836.30	1590000000
1997	4,305.68	13,755.50	3,554.50	23,404.70	187,491.60	2060000000
1998	4,475.24	6,052.80	3,456.00	22,587.10	175,764.80	2890000000
1999	4,703.64	4,920.00	6,180.00	11,952.00	204,058.00	59320000000
2000	4,840.97	4,928.00	899.00	27,307.00	303,677.00	6340000000
2001	5,024.54	17,169.00	15,742.20	60,415.70	605,525.70	7060000000
2002	7,817.08	13,214.40	12,069.30	64,449.60	925,734.70	9990000000
2003	8,364.83	10,961.00	13,050.00	100,486.40	1,015,194.60	7540000000
2004	8,888.57	18,185.00	18,240.00	190,304.00	1,807,667.70	11260000000
2005	9,516.99	154,830.00	262,195.00	844,882.80	8,039,640.10	16330000000
2006	10,222.47	67,165.00	114,400.00	368,151.00	3,636,053.68	17920000000
2007	10,958.47	42,331.00	140,690.00	353,487.25	3,533,429.69	32480000000
2008	11,645.37	190,589.00	368,630.00	1,108,483.82	4,775,375.65	65400000000
2009	12,330.33	298,367.80	708,621.24	1,725,801.27	5,496,286.16	22440000000
2010	13,048.89	99,740.00	461,128.00	1,305,432.50	5,194,976.13	28220000000
2011	13,429.38	108,529.92	589,667.50	1,878,263.35	6,657,657.24	41200000000
2012	14,329.71	408,244.06	378,311.89	1,878,042.97	5,979,762.86	33300000000
2013	14,750.52	142,288.00	371,403.00	1,883,008.25	5,668,766.55	39430000000
2014	15,380.39	482,556.00	453,426.00	2,342,246.89	6,976,103.98	36700000000
2015	15,952.22	406,750.00	485,089.18	1,444,012.50	6,851,874.73	41270000000
2016	16,607.34	465,115.00	444,763.00	1,169,448.00	5,163,766.49	36300000000
2017	17,179.50	520,425.00	387,084.00	768,086.00	3,626,099.71	50260000000
2018	17,544.15	452,535.00	301,348.00	626,244.00	2,424,619.94	53990000000
2019	17,958.58	489,290.00	313,705.00	725,462.96	4,070,032.47	70270000000

Source: Central Bank of Nigeria Statistical Bulletin, 2019.