THE AGRICULTURAL CREDIT GUARANTEE SCHEME FUND (ACGSF) AND FOOD SECURITY IN NIGERIA (1990 - 2013).

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Abstract: *The paper assessed the impact of Agricultural Credit Guarantee Scheme Fund's (ACGSF) on food Security in Nigeria. The paper appraises the provision of finance under the Agricultural Credit Guarantee Scheme Fund, assessing its impact on food security in Nigeria. Relevant data from Central Bank Nigeria statistical bulletin for the period of 1990 to 2013 was used for analysis. Regression analysis (OLS) was employed to test the relation. From the estimated regression results, the coefficient of ACGSF of about 0.0011 indicates that if we increase ACGSF by 1% on average, food supply goes up by about 0.1, holding the interest input constant. Similarly, holding ACGSF constant, if we increase the interest input by 1%, on the average, Food Supply increases by 0.496%. The R-squared value shows that 85% of the variation in food supply is explained by the regressors. The positive relationship between interest rate and guaranteed loans (as against apriori expectation) confirm that despite the increasing interest constraint farmers still obtain loans to meet farm needs. This work therefore concludes that although the fund has contributed positively to food security in the country, it is still inadequate. The study recommends strong institutional framework for lending is needed owing that most banks do not favour lending to farmers (particularly small-scale farmers), in addition, and that interest rate should be reviewed downwards.*

Key Words*: Agriculture, Financial institution, Agricultural credit,Food security, Agricultural output.*

Introduction

Nigeria's current interest in food security is hardlysurprising, because Nigeria has a land-mass estimated at 923,768km and 80% of this is fertile for farm use (Esau, 2005). In addition to this, the human resource (estimated at about 160 million people) if effectively managed, would result to abundant food for the nation.

Agricultural development is a process that involves adoption by farmers (particularly small-scale farmers) of new and better practices (Orebiyi, 1999). In this respect, new practices have to be purchased but only few farmers have the financial resources to finance it. It was in recognition of this fact that the federal government at various periods put in place credit policies and established credit institutions and schemes that could facilitate the flow of agricultural credit to farmers (Adegeye and Dittoh, 1985). One of such laudable scheme has been the Agricultural Credit Guarantee Scheme Fund (ACGSF). The unpredictable and risky nature of agricultural production, the importance of agriculture to our national economy, the need to provide additional incentive to further enhance the development of agriculture to solve the problem of food insecurity, and the increasing demand by lending institutions for appropriate risk aversion measures in agricultural lending, provided justification for the establishment of the Nigerian Agricultural Credit Guarantee Scheme Fund (ACGSF) by the federal government of Nigeria in 1977 (Mafimisebi *etal.*,2008). The scheme was established by Decree 20 of March, 1977 and as amended on 13th June, 1988. It provides for a fund of N100 million subscribed to the Federal Government (60%) and the Central Bank of Nigeria (40%). The fund was enhanced to N1 billion on the 8th of December, 1999 and later to its present level of 4 billion as at early 2006 (CBN, 2007). All these are aimed at solving the problem of inadequate funding of farm operations by banks and to cushion these financial institutions against the effects of high risk associated with investment in farm enterprises as well as to raise the productivity andearnings from farm investments, so that the incidence of loan repayment default among farmers will be minimized (CBN, 1977; Oguoma, 2002).

Various studies have shown that credit plays an important role in enhancing agricultural productivity of farmers (Mafimisebi *et al.*, 2008). The general purpose of the Agricultural Credit Guarantee Scheme Fund is to encourage banks to lend to those engaged in agricultural production and agro-processing activities. In this light, the specific objective of the scheme is the stimulation of total agricultural production for both domestic consumption and export, and the encouragement of financial institutions to participate in increasing the productive capacity of agriculture through acapital lending programme. The scheme is expected to provide guarantee on loans granted by financial institutions to farmers for agricultural production and agro-allied processing. The fund's liability is limited to 75% of the amount in default net of any amount realized by the lending bank from the sale of the security pledged by the borrower. Since the inception of the scheme in 1978, there has been a continuous aggregate increase in the number of loans to agriculture from a paltry 341 loans amounting to N1128 million in 1978 to 49510 loans amounting to N8682,940.3 million in the year 2013.

The agricultural activities that can be guaranteed under the scheme include:

a. Establishment and/ or management of plantation for the establishment of rubber, oil palm, cocoa, cotton, coffee, tea and other cash crops.
b. Cultivation and production of cereals, tubers and root crops, fruits of all kinds, beans, groundnuts, peanuts, beniseed, vegetables, pineapple, banana and plantain.
c. Animal husbandry, covering poultry, piggery, rabbitry, snail farming, rearing of small ruminants like goats, sheep and large ruminants like cattle.The scope was expanded in the amended decree of 1988 to include fish culture, fish capture and storage.

The scheme guarantees loans to farmers from lending institutions up to a tune of 5 million naira for individual farmers and 10 million naira for group/ cooperative farmers (CBN, 2007). In the event of default in loan repayment, the lending bank will serve the guarantor (the CBN) notice of default. Afterwards, the lending bank is expected to make further effort as it deems fit to recover the amount in default from the borrower. If any balance remains after the above steps and the default persists after 6 months of

notice of default, the lending bank could realize the pledged security and thereafter put a claim on the scheme's fund so as to realize 75% of the balance outstanding as at the time of application for claims to the bank.

Recent innovation to the scheme by the Central Bank of Nigeria includes Self-Help Group Linkage Banking, the Trust Fund Model and the Interest Drawback. Of these, the Interest Drawback Scheme seems interesting, as it works to encourage bank lending at lower rates of interest (average of 8%) which is cheaper for the farmer and easier to manage for the bank. This is expected to have profound effect on the agricultural production and consequently on food security.

The Agricultural Credit Guarantee Scheme was established by the Nigerian government to provide a secure food base through financing. Despite government's effort in this direction, Nigeria's food security problem still lingers. This research therefore assesses the scheme, to finding out impediments to this policy stance by appraising the Agricultural Credit Guarantee Scheme fund to determine its contribution to food security in Nigeria, determine challenges hampering the scheme and proffer solutions.In this light, the hypothesis that ACGSF has not impacted positively and significantly on food security in Nigeria, is tested.

LITERATURE REVIEW

Conceptual Overview

Agriculture: Okunyeye (2001), defined agriculture as involving the cultivation of land, raising and rearing of animals for the purpose of production of food for man, feed for animals and raw materials for industries.

Credit: Credit is defined as financial resource obtained at certain period of time with an obligation to repay at asubsequent period in accordance with terms and conditions of the credit obtained (Ijaiya and Abdulraheem, 2000).

Agri**c**ultural credit on the other hand, refers to loans extended to farmers for production, storage, processing, and marketing of farm produce. Such credit can be short, medium or long term depending on its duration (Ijaiya*et al.*, 2009). The purpose of agricultural credit may also be categorized as livestock production credit, food crop production credit, and cash crop production credit depending on the purpose for which the credit is meant (CBN).

Agricultural Credit and Agricultural Output

Ijaiya and Ijaiya (2005) states that, agricultural credit can have a secondary spillover effect on non-farm household via inputs, labor, and output linkages. Additional credit supply to credit constrained farmers raises input use, investment and output(the liquidity effect). Where agriculture still remains a risky activity, better agricultural credit facilities can help farmers' smooth-out consumption, and therefore increase the willingness of risk adverse farmers to take risks and make agricultural investment. This is referred to as consumption smoothing effect (Ijaiya *et al.,* 2009).

Studies have shown that government interventions in the form of price control, trade restrictions or"tied" state credit have removed farmers' impediments to profit making and this has impacted positively on food production (Trezeciak-Duval,2003). Qureshi *et. al.,* (1996) also observed that an increase in credit to agriculture by government can also increase food

production and farmers' income because as the demand for credit increases, farmers' output also increases and consequently improves their wellbeing.

FoodSecurity: Meaning and Determinant.

The World Bank (1996), defined food security as access by all people at all time to enough food for an active and healthy life. This definition has two inherent elements. First, the availability of food through production, storage or imports; and a second, underlying access of people to food by having the income to buy it or the financial and other resource to grow it.

IFAD (2007), states that food security is a combination of two distinct problems: a problem of acquisition and a problem of utilization. Acquisition in this sense refers to the ability of a household and its members to acquire enough food through production, exchange or transfer. However, the capacity to acquire all the food items may not always transform to the ability to utilize the capacity to the fullest. Therefore, a household can be said to be food secure only if it is secure in terms of both the acquisition and the utilization of food.

In furtherance of the food security concept, IFAD (2007) identifies four levels of food security determinant, these are: the ability to improve and maintain the level of acquisition, the ability to cope with the shocks to acquisition, the ability to improve and maintain the level of utilization, and the ability to cope with shocks to the utilization. The level of acquisition is described as the endowment set and entitlement mapping. The endowment set consists of all the resources a household owns or over which it has rights over, whether legal or conventional. The resources include tangible resources, such as land, animals, machinery, water resources, trees, forest, and common property resources; and intangible resources, such as households' labour, power and rights attached to membership in a community. Using these resources, a household can acquire food directly through production, or indirectly through exchange and transfer. The richer the endowment set, the better the access to food. While endowment mapping refers to the rate at which the resource endowment set can be converted into food. There are three main components of entitlement mapping: a production component, consisting of various input-output ratios and

production functions, an exchange component made up of the rate of exchange involved in a trading, and a transfer component which could be social security benefit or the free distribution of food grain to the poor through funds. Hence, the endowment set and entitlement mapping together determines a household's ability to acquire food. The ability to cope with shocks to acquirement comes from several sources, including crop failure, unemployment, higher cost of food, and so on. Some households are better able to cope with these shocks than others. The ability of the household to cope with these shocks will determine their ability to access food. Besides a certain basic level of food acquirement, a household's food security level would also depend on how well this food was utilized. The utilization of food encompasses both preparation and storage. The difference in the quality of preparation or storage would yield different levels of food security given the same level of acquirement. For example, most rural households that produce their own food (and also some that do not), store food for at least a part of the lean season. In most cases, the storage facility is woefully inadequate, resulting in substantial losses both in quality and quantity of food. The efficiency of these preparation and storage facilities will also determine the household's access to food at all times. The fourth determinant is anchored on the ability to cope with shocks of utilization. Women play a key role in proper utilization of food and a wife's sudden illness is an obvious example of such a shock, therefore, the availability and the quality of women's health care facilities and the existence of a support network that can provide help to women in the performance of domestic chores will determine the household's access to food.

Mano*et, al.* (2003), also asserts that sound strategic grain reserve policies and agricultural development strategies, especially where policy makers recognize the weakness of past agricultural strategies, macroeconomic policies, domestic marketing, and pricing policies and regional trade relations, as well as policy environment that favour smallholder rural development, soil fertility and more intensive and diverse land use, based on domestication of indigenous trees to produce high value products while increasing agro ecosystemresilience will transform smallholder farming in Africa into productive and sustainable enterprise, and will contribute greatly to food security (Sanchez and Leaky,1997).

Agricultural Credit Guarantee Scheme Fund (ACGSF) and Food Security in Nigeria: Trends and Constraints.

To arrest the problem of food security, the federal government of Nigeria established the Agricultural Credit Guarantee Scheme (ACGS) in 1977 to guarantee credit disbursement to agriculture in Nigeria. However, since problem of food security is reduced to a problem of production and national self-sufficiency (Okunyeye, 2001), the trend associated with the scheme and food security in the country is analyzed. The percentage of ACGSF to food production was low between 1978 and 1987, and this low credit is reflected in total food production in the period. However, from 1988 to 2013 there have been steady increases in credit disbursement to food production, and this increase is reflected in the total food production for the country. This increase was also attributed to the effect of enlightenment campaigns adopted by the Central Bank of Nigeria (CBN) to improve credit delivery, the implementation of special programme on food security aimed at attaining self-sufficiency with a $42.5 million Unilateral Trust Fund (UTF), the construction of several multi-purpose irrigation dams, the approval in 2003 of the recommendation of the presidential committee on how to boost agricultural production and marketing of agricultural products in Nigeria (CBN, 2003).

Agriculture has experienced a number of changes under the transformation agenda of the present administration.There is now more private investment in agriculture, including bank lending. Farmers now receive assistance in the form of loans, equipment on lease and seedling. Nigeria has reduced its food imports by over 40% as of 2013(The Nigerian Observer, dated 28th November, 2014), moving the country close to self-sufficiency in agriculture. The increase in food production has helped to stabilize food prices, driving down inflation into single digits. Today, Nigeria is now the largest producer of cassava in the world, with output of over 45 million metric tons in 2014 according to the Food and Agricultural Organization of the United Nations (FAO).

Constraints: In the course of the fund's operations, a number of problems have been identified as militating against the smooth performance of the scheme.According to Akinleye *et al.*(2005), some of theproblems are:

(a) Increasing incidence of loan defaults: Therate of loan repayment by ACGSF beneficiaries is very low. This viewisalsoheld by Njoku (1986) and Ojo (1986).Reasons adduced to this are naturaldisasters, poor farmmanagement, lowproduct prices, loan diversion, deliberaterefusal to pay and the inability of farmersto assess loan requirements properly, leading to farmers receipt of inadequate orexcessive loans.

(b) Bank related problems: Participatorybanks in the ACGS do not cooperate fullyin lending to farmers. Because of the highcost of processing loans relative to theactual loans and the high default rate of farmers, many banksprefer to pay penalty than risk lending their funds to agriculture.Also banks fault the farmers for submitting incomplete application forms. In somecases where loans are approved, it arrivestoo late for it to fulfill the purpose forwhich it was intended. This delay seemsmore of administrative than any other.Another problem that militates against thesmooth operation of the scheme is on

(c) "Personalguarantee" as a security that may be offered to abank for the purpose of a loan. "Personal guarantee"as a condition was not explained in the decree. Thistherefore makes it almost nothing as itsinterpretation rests on the bank's officials. Also, theN20,000 loan which the schemeallowed to becollected through "Personal guarantee" cannot domuch for any farmer in his farming activities. Also, the other securities recognized by the decree that could be offered to the bank for the purpose of anyloan under the scheme pose problems in the smoothoperation of the scheme. The securities are legaltitle to land, and a lifeassurance policy. It is acommon knowledge that most people especially inthe rural areas do not have clear titles to their landwhich could serve as collateral for loan under thescheme (Okorie, 1998).

(d) Finally, the ACGSF has the problem ofpublicity. Oguoma (2002) noted that there is a low turnout of farmers in most states of the federationin patronizing the scheme because of lack ofawareness.

Empirical Literature

Several studies on the Agricultural Credit Guarantee Fund Scheme and food security have been reported in literature.

Kehinde, A. A, (2012) examined the provision of credit to the agricultural sector along with the performance of the ACGSF while at the same time evaluating the food security status of Nigeria from 1978 to 2006. It finds out that though credit to the agricultural sector is significant, it has not been growing relatively to food security in the country. It concludes that Nigeria is food insecure, that the imports of food are on the rise as the work's test results show. Among the recommendations made to improve the current situation includes further enlightenment campaigns to bring the youth into agricultural production and the management of the scheme by professionals.Aliyu, A. A. (2012) carried out an investigation into the relationship between agricultural production and formal credit supply in Nigeria. The methodology employed in the study involved the development of and estimation of three simple regression models relating agricultural output with formal credit while holding other explanatory variables constant. Findings indicate that formal credit is positively and significantly related to the productivity of crops, livestock and fishing sub-sectors. It recommended that government should continue to encourage the expansion of formal credit sources to reach as much farmers as possible. Nwosu *et al.,* (2010) tried to review the Agricultural Credit Guarantee Scheme Fund, it's roles since inception, problems and prospects on contributing towards the nation's agricultural development. The study concluded that since credit for enhanced productivity and agricultural development is needed, the three tiers of government in Nigeria should give the scheme the necessary support and publicity, so that this would go a long way in ameliorating the seemingly dismal output of farmers. Ijaiya *et al.,* (2009), investigated the Agricultural Credit Guarantee Scheme Fund in Nigeria, between 1978 to 2008. Using time subscript and a difference-in-difference estimator that described the changes in food crops as a function of changes in ACGSF, the results obtained shows that only the initial level of ACGSF on food security has helped improve food security more than the changes experienced in recent time. It is therefore recommended that government should put in place an effective legislation that would establish reliable ground rules for

consistent and equitable application of ACGSF and stable macroeconomic policies that would sustain it.

This work employed up to date information, analyzing prevailing issues as it affects food security in the country.

Research Methodology

This study employed time series data covering 1991 to 2013. The data was obtained from Central Bank of Nigeria statistical bulletin for 2013. Data for each analysis were tested for stationarity using unit root test and regression analysis using the ordinary least square (OLS) was carried out to test the relationship between the ACGSF and food security in Nigeria. This research adapts the Neoclassical theory of production which emphasizes efficiency of input use to examine the impact of ACGSF (as input factor (guaranteed credit)) on food security in Nigeria. The model which consists of three variables, viz:food security (proxied by total agricultural output for crop, livestock, forestry and fish production for the period under review),ACGSF (total value of loans guaranteed under the Agricultural Credit Guarantee Scheme for the period under review) and Interest Rate in the period. The model is thus specified:

$$FS = \beta_0 + \beta_1 ACGSF + \beta_2 INT$$

Where:

FS = Food Security in Nigeria (proxied by total agricultural output for crop, livestock, forestry and fish production (1990-2013)).

$ACGSF$ = Total value of loans guaranteed under the Agricultural Credit Guarantee Scheme (1990 to 2013).

INT = Interest Rate in the period

U = Error Term

$\beta_0, \beta_1, \beta_2$ = Intercept, and coefficients of parameters respectively.

DATA PRESENTATION AND ANALYSIS OF RESULTS

Table 1 shows the values of Food Supply (FS), Agricultural Credit Fund (ACGF), and Interest rate charged (INT) from 1990 - 2013. The data shows that while the value of ACGF dropped from #103,395.2 in 1990 to

#93,391.8 in 1992, the value of FS increased from 122.2 to 217.4 within the same period. The value of ACGF increased steadily between 1994 – 2004, the value of FS increased steadily also within the period 1994 – 2004. Interest rate was observed to be fluctuating within the period under review. In 1990 it was 27.7%, it jumped to 36.09% in 1993 but went back to 20.86% in 1996. In 2007 it came to the lowest of 18.36. FS was at its highest in 2013 with a value of 14709.1 when ACGF was #9,256,676.8 and INT is 27.70.

Table 1: Values of Food Supply, Agricultural Credit Guarantee Fund between 1990 - 2013

YEAR	FS(#MILLION)	ACGF (# THOUSANDS)	INTR (RATES)
1990	122.2	103,395.2	27.70
1991	144.7	80,859.6	20.80
1992	217.4	93,391.8	31.20
1993	350	81,273.8	36.09
1994	529	106,901.0	21.00
1995	940.3	166,645.1	20.79
1996	1275.8	227,664.5	20.86
1997	1445.1	242,028.3	23.32
1998	1600.6	220,288.5	21.34
1999	1704.8	241,839.0	27.19
2000	1801.5	361,449.0	21.55
2001	2410.1	728,545.4	21.34
2002	2847.1	1,050,982.3	30.19
2003	3231.4	1,151,015.0	22.88
2004	3903.8	2,083,744.7	20.82
2005	4753	9,493,854.5	19.49
2006	5940.2	4,262,430.3	18.70
2007	6757.9	4,425,461.5	18.36
2008	7981.4	6,497,958.9	18.70
2009	9186.3	8,328,565.8	22.62
2010	10310.7	7,840,496.6	22.51
2011	11593.4	10,029,488.8	22.42

2012	13413.8	9,332,484.2	23.79
2013	14709.1	9,256,676.8	27.70

Source: CBN Statistical Bulletin, 2013.

Stationarity Test

The result for the stationarity test using the conventional Augmented Dickey-Fuller (ADF) test are presented for each variable below.

Test of stationarity in the Food Supply variable (FS).

Table 2: Augumented Dickey-Fuller Test at Levels for FS

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		10.18637	1.0000
Test critical values:	1% level	-3.752946	
	5% level	-2.998064	
	10% level	-2.638752	

*MacKinnon (1996) one-sided p-values.

Source: Author's Computation

Table 3: Augumented Dickey-Fuller Test at First Difference for FS

Variable	Coefficient	Std. Error	t-Statistic	Prob.
FS(-1)	0.118426	0.011626	10.18637	0.0000
C	158.1361	65.30374	2.421547	0.0246
R-squared	0.831680	Mean dependent var		634.2130
Adjusted R-squared	0.823664	S.D. dependent var		520.8983
S.E. of regression	218.7373	Akaike info criterion		13.69656
Sum squared resid	1004766.	Schwarz criterion		13.79530
Log likelihood	-155.5105	F-statistic		103.7621
Durbin-Watson stat	1.682371	Prob(F-statistic)		0.000000

Source: Author's Computation

The FS (Food Security) variable was not stationary in levels from the above table. This can be seen by comparing the observed values (in absolute terms) of both the ADF and PP test statistics with the critical values (also in absolute terms) of the test statistics at the 1%, 5% and 10% level of significance. But that the variable was stationary at first difference. We therefore conclude that the variable is stationary and integrated of order one.

Test for stationarity in the ACGSF variable.

Table 4: Augumented Dickey-Fuller Test at Levels for ACGSF

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		3.579634	1.0000
Test critical values:	1% level	-3.959148	
	5% level	-3.081002	
	10% level	-2.681330	

Source: Author's Computation
*MacKinnon (1996) one-sided p-values.
Warning: Probabilities and critical values calculated for 20 observations and may not be accurate for a sample size of 15

Table 5: Augumented Dickey-Fuller Test at First Difference for ACGSF

Variable	Coefficient	Std. Error	t-Statistic	Prob.
ACGF(-1)	47.80559	13.35488	3.579634	0.0159
D(ACGF(-1))	-49.24502	13.56213	-3.631069	0.0150
D(ACGF(-2))	-49.13110	13.55557	-3.624420	0.0151
D(ACGF(-3))	-48.55430	13.48231	-3.601334	0.0155
D(ACGF(-4))	-47.95928	13.41796	-3.574261	0.0160
D(ACGF(-5))	-49.88160	13.96374	-3.572222	0.0160
D(ACGF(-6))	-53.58667	15.06520	-3.556985	0.0163
D(ACGF(-7))	-56.10407	15.72410	-3.568030	0.0161
D(ACGF(-8))	-65.72993	18.35755	-3.580539	0.0159
C	-3217702.	1480319.	-2.173655	0.0818
R-squared	0.836876	Mean dependent var		602425.9
Adjusted R-squared	0.543252	S.D. dependent var		2551773.
S.E. of regression	1724569.	Akaike info criterion		31.79357
Sum squared resid	1.49E+13	Schwarz criterion		32.26561
Log likelihood	-228.4518	F-statistic		2.850160
Durbin-Watson stat	2.336075	Prob(F-statistic)		0.130639

Source: Author's Computation

The ACGSF variable was not stationary in levels from the above table. This can be seen by comparing the observed values (in absolute terms) of both the ADF and PP test statistics with the critical values (also in absolute terms) of the test statistics at the 1%, 5% and 10% level of significance. But that the variable was stationary from the first difference, as shown above.

We therefore conclude that the variable is stationary and integrated from order one.

Test for stationarity in the interst rate variable (INT).

Table 6: Augumented Dickey-Fuller Test at Levels for INT

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-3.579269	0.0147
Test critical values:	1% level	-3.752946	
	5% level	-2.998064	
	10% level	-2.638752	

*MacKinnon (1996) one-sided p-values.
Source: Author's Computation

Table 7: Augumented Dickey-Fuller Test at First Difference for INT

Variable	Coefficient	Std. Error	t-Statistic	Prob.
INTR(-1)	-0.757807	0.211721	-3.579269	0.0018
C	17.58309	4.997432	3.518426	0.0020
R-squared	0.378903	Mean dependent var		0.000000
Adjusted R-squared	0.349327	S.D. dependent var		5.455045
S.E. of regression	4.400273	Akaike info criterion		5.884152
Sum squared resid	406.6105	Schwarz criterion		5.982890
Log likelihood	-65.66774	F-statistic		12.81116
Durbin-Watson stat	1.800866	Prob(F-statistic)		0.001768

Source: Author's Computation

The interest rate variable was not stationary in levels from the above table. This can be seen by comparing the observed values (in absolute terms) of both the ADF and PP test statistics with the critical values (also in absolute terms) of the test statistics at the 1%, 5% and 10% levels of significance. But that the variable was stationary at first difference. We therefore conclude that the variable is stationary and integrated of order one.

Table 8: Regression analysis to test for the relationship between the Agricultural Credit Guarantee Scheme Fund (ACGSF) and Food Security in Nigeria

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-165.3649	2182.529	-0.075768	0.9403
ACGF	0.001090	0.000101	10.75445	0.0000
INTR	49.59232	87.82810	0.564652	0.5783
R-squared	0.850417	Mean dependent var		4465.400
Adjusted R-squared	0.836171	S.D. dependent var		4489.032
S.E. of regression	1816.970	Akaike info criterion		17.96420
Sum squared resid	69328974	Schwarz criterion		18.11145
Log likelihood	-212.5704	F-statistic		59.69527
Durbin-Watson stat	1.669212	Prob(F-statistic)		0.000000

Source: Author's Computation

The ACGSFcoefficient met *a priori* expectation (as indicated by the positive relationship with FS) while the interest rate coefficient went against *apriori* expectation (as indicated by the positive relationship with FS; this perhaps is as a result of the fact that despite interest rate increases in Nigeria, farmers are faced with the choice of obtaining credit at this high rate to meet production needs. The interpretation of the coefficient of ACGSF of about 0.0011 indicates that if we increase ACGSF by 1% on average, food supply goes up by about 0.1, holding the interest input constant. Similarly, holding ACGSF constant, if we increase the interest input by 1%, on average, FS increases by 0.496%. The R-squared value shows that 85% of the variation in food supply is explained by the regressors (also indicating that the model has a good fit). The Durbin- Watson statistics which is approximately 2 is indicative of the absence of autocorrelation.The F statistics, which tests the hypothesis, clearly rejects the null hypothesis, for its value of 59.69 issignificant and its P value is practically zero.

FINDINGS, CONCLUSION AND RECOMMENDATIONS

The study has examined the Agricultural Credit Guarantee Scheme Fund and food security in Nigeria between 1990 to 2013. As finding, the ACGSF has been impactful to food security in Nigeria, this is captured by the positive relationship between the scheme and food security as the estimated regression results confirm, also despite interest increases farmers still kept on borrowing for farm operation.

As conclusion, although there has been increases in food production in Nigeria (both crop and livestock), the Nigeria food security situation is insecure, taking into consideration Nigeria's growing population and food deficit and the increasing food import bills.

To improve on the gains of the Agricultural Credit Guarantee Scheme Fund, it is essential that the following policy measures are put in place:

1) A strong institutional framework for lending is needed owing that most banks do not favor lending to farmers (particularly small farmers). Although the Central Bank (managers of the ACGSF) has substantially managed the fund, the slow settlement process has affected confidence in the fund. In this light, government should further develop its policy to put the management of the fund in the hands of professionals.
2) Farmers need to be properly educated on the importance of the supporting groups (Interest Drawback and the Linkage Group) to enable them benefit from the assistance the fund is offering. The groups will help in self and internal guarantees for members; to further stress the needful; addition rural enlightenment programs are needed.
3) As most farmers are uneducated and ageing, the introduction of sustainable and attractively polished credit and guarantee scheme will help attract the youth and the uneducated. This would naturally affect food production and output level in the economy.
4) The government should play an important role in contract enforcement in agricultural development by ensuring timely and just recourse against the failure to meet contract obligations or other

abuses in agricultural policies most especially on those that affect the smooth operation of the ACGSF.

5) The present challenge posed by insurgency in the north-eastern part of the country needs to be effectively tackled by government owing to the fact that farmers in affected areas have abandoned production for safety and this has significantly reduced output level of agricultural production.
6) Lastly, interest rate should be revised downwards to encourage particularly small farmers as they constitute the majority of the farming population in Nigeria.

REFERENCES

Adegeye, A. J. and Dittoh, J. S. (1985*).“Essentials of Agricultural Economics*”. A Publication of Centre for Agricultural and Rural Development, Ibadan, Nigeria.

Akinleye, S. O., Akani, K.. A., and Sekunbe, A. B, (2005). “An Appraisal of the Agricultural Credit Guaranty Scheme Fund In Nigeria”.*Journal of Agricultural Management and Rural Development,* 2: 51- 68.

Ajibefun, I. A. and Daramola, A. E. (1999).“Measurement and Sources of Technical Inefficiency in Poultry Egg Production in Ondo State, Nigeria”.*Journal of Rural Economics and Development,* 5(2):85-87.

Ali, M. and Chaudery, M. A. (1990). “Inter Regional Farm Efficiency in Pakistan, Punjab: A Frontier Prduction Function Study”. *Journal of Agricultural Economics,* 9 (2): 62-64.

Alimi, T. (2009).“Resource Use Effiency in Food Crop Production in Ogun State of Nigeria”.*Journal of Agriculture and Environment,* 1(1):50-54

Aliyu, A. A. (2012). “An Investigation intothe Relationship Between Agricultural Production and Formal Credit Supply in Nigeria”.*International Journal of Agriculture and Forestry,* 3(28): 46- 52.

Bravo-Ureta, B. E. and Evenson, R. E. (1994). “Efficiency in Agricultural Production: The Case of Peasant Farmers in Eastern Paraguay”. *Journal of Agricultural Economics,* 10(3): 27- 31.

Central Bank of Nigeria (1977).Annual Report and Statistical Bulletin, 1977-1988.

Central Bank of Nigeria (2003).“Agricultural Development: Issues of Sustainability”, In: Nanna, O. J., Alade, S. O., Odoko, E. O. (Eds.): *Contemporary Economic Policy Issues in Nigeria*.

Central Bank of Nigeria (2007).“Agricultural Credit Guarantee Scheme Fund of Nigeria (ACGSF): An Impact Assessment”. A Study Conducted by Centre for Resource Analysis and Management for Central Bank of Nigeria, Pp. 15- 16.

Esau, I. (2005).“Characterization, Classification and Management Problems of the Major Soil Orders in Nigeria”. Text of Inaugural Lecture, University of Calabar, April, 2005.

Helfand, S. M. (2003). Farm Size and the Determination of Productive Efficiency in the Brazilian

Centre – West. Proceeding of the 25th International Conference of Agricultural Economics, Durban, South Africa, 16th – 22nd August, 2002, Pp. 605 – 612.

IFAD (2007). Food, Poverty, and Women: Lessons from Rural Asia. Retrieved from http:www.ifad.org.

Ijaiya, G. T. and Abdulraheem, A. (2000).“Commercial Bank Credits tothe Agricultural Sector and Poverty Reduction in Nigeria: A Calibration Analysis”.*Nigerian Journal of Agricbiz and Rural Development*, 1(1): 143- 148.

Ijaiya, M. A., Abdul, A. A. and Abdullahi, I. B., (2009). *“*Agricultural Credit Guarantee Scheme and Food Security in Nigeria”.*Journal of International Economics Review*, 2(2): 167- 171.

Ijaiya, M. A., and Ijaiya G. T., (2005).“The Impact of Agricultural Finance on Agricultural output in Nigeria”. In. Jugale (Ed.), Poverty,

Globalisation and Human Development, Serial Publications, New Delhi.

Kehinde, A. A. (2012).“Agricultural Financing In Nigeria: An Assessment of The Agricultural Credit Gurantee Scheme Fund (ACGSF) For Food Security in Nigeria (1978- 2006)”.*Journal of Economics*, 3(1): 39- 44.

Kumbhakar, S. C. (1994). “Efficiency Estimation in Profit Maximization Model Using Flexible Production”.*Journal of Agricultural Economics*, 10(2):143- 157.

Mafimisebi, T. E., Oguntade, A. E. and Mafimisebi, O. E. (2008).“A Perspective on Partial Credit Guarantee Schemes In Developing Countries: The Case of The Agricultural Credit Guarantee Scheme Fund (ACGSF)”. Paper Presented At Washington D C, from March 13- 14, Pp. 2- 4.

Mano, R., Isaacson, B. and Dardel, P. (2003).“Identifying Policy Determinants of Food Security, Response and Recovery in The SADC Region: The Case of The 2002 Food Emergency”. Being Paper Presented For The FANRPAN Regional Dialogue On Agricultural Recovery, Food Security and Trade Policies in Southern Africa, Garborone, Botswana, 26- 27 March.

Njoku , J. E. (1986). “Loan Diversion as a Case of Loan Default in Nigeria, Causes, Consequences and Preventive Measures”. A Paper Presented At The NACB Seminar, Owerri, November, 1986, Pp. 18- 21.

Nwosu, F. O., Oguoma, N. N. O., Ben- Chendo, N. G. and Henri- Ukoha, A., (2010).“The Agricultural Credit Guarantee Scheme Fund: Its Roles, Problems and Prospects in Nigeria’s Quest for Agricultural Development”.*The Researcher*, 2: 87- 90.

Oguoma, N. N. O. (2002).“An Evaluation of the Agricultural Credit Guarantee Scheme Fund in Imo State, Nigeria”. Unpublished Ph. D Thesis, Department of Agricultural Economics, Federal University of Technology, Owerri, Nigeria. Pp. 13- 15.

Ogunjobi, O. P. (1999). “Efficiency of Small Holder Cocoa Farmers in Ondo State, Nigeria: A Stochastic Frontier Analysis”. Unpublished M. Sc Thesis, Federal University of Technology Akure, Nigeria.

Ojo, A. T. (1986).“Overveiw of The Financial System: An Appraisal in the Context of Nigeria’s Economic Development”.*CBN Bullion*, 10 (1): 22- 29.

Ojo, E. O. (2014, November, 28), “Food Security and National Development”.The Nigerian Observer. Retrieved from http://nigerianobservernews.com/17022014/features/features6.html

Okorie, A. (1998).“The Agricultural Credit Guarantee Scheme Fund and Credit Administration in Nigeria: Problems and Prospects”. In Ijere, M. O. and Okorie, A. (Eds.) Readings in Agricultural Finance, Longman Publisher, Nigeria, Ikeja, Pp.38-40.

Okuneye, P. A. (2001). “Rising Cost of Food Price and Food Insecurity in Nigeria and Its Implication for Poverty Reduction”.CBN Economic and Financial Review.

Olayemi, J. k. (2004).“Principles of Micro- Economics for Applied Economic Analysis”. Sico Publishers, 36 Abel Abu Street, Mokola – Ibadan, Nigeria, Pp. 67.

Olayide, S. O. and Heady, E. O. (1982).Introduction to Agricultural Production Economics. Ibadan University Press, Nigeria

Orebiyi, J. S. (1999).“The Performance of Rural Credit Market in Imo State, Nigeria”. Unpublished Ph. D Thesis, Department of Agricultural Economics, Federal University of Technology, Owerri, Pp. 10-15.

Qureshi, S., Nabi, I., and Faaruquee, R., (1996).“Rural Finance for Growth and Poverty Alleviation”.World Bank Policy Working Paper, No. 1593.

Sanchez, P. A., and Leaky, R. P. B. (1997).“Land Use Transformation in Africa: Three Determinants for Balancing Food Security with Natural Resource Utilization”. *European Journal of Agronomy*, 2: 222 – 227.

Shapiro, R. H. (1983). “Efficiency Differentials in Peasant Agriculture and their Implications for Development Policies”.*Journal of Development Studies*, 12(5):179- 182.

Shepherds, W. G. (1985). “How Competition and Monopoly Affects Performance Practice: Economics of Industrial Organization”. Hale International Inc., London, Pp. 17.

Trezeciak-Duval, A. (2003).“Agricultural Finance and Credit Infrastructure: Conditions, Policies and Channels*”. Institute of Agricultural Economics, Czech*, 3:106- 112.

World Bank (1996).“Nigeria in the midst of plenty, The Challenges of Growth and Inclusion”. Report No. 14733 UNI, the World Bank, Washington DC