

IMPACT OF AGRICULTURAL CREDIT GUARANTEE SCHEME FUND (ACGSF) ON DOMESTIC FOOD SUPPLY IN NIGERIA

Saheed, Zakaree S. (PhD)

Department of Economics and Management Sciences,
Nigerian Defence Academy, Kaduna,
Kaduna State, Nigeria.
zakss_1@yahoo.co.uk

ABSTRACT

Food supply in Nigeria depends on the rural population who are the main producers of food for the entire population. However, due continuous movement of people, particularly, the youths, to the cities in search of lucrative jobs, very few people are left to work on farms. Majority of these farmers engage in subsistence agriculture and lack sufficient funds to operate, expand their business, or even practice mechanized farming, with modern equipment like plough, tractors and other labour saving devices. There is insufficient and limited sources from which funds can be obtained by these farmers. In fact, Just a third of the credit needs in rural areas are met by formal lending agencies, which has led to the dominance of informal credit associations like the credit and drift cooperatives, community development associations and moneylenders. As part of the government effort to guarantee adequate food supply in Nigeria, the government has put in place many policies including agricultural credit fund, that is agricultural credit guarantee scheme fund (ACGSF).

Aims: The objective of this paper is to examine the effect of Agricultural Credit Guarantee Scheme Fund (ACGSF) on domestic food supply in Nigeria

Place and Duration of Study: The study is carried out in Nigeria, between the period of 1988 and 2011.

Methodology: The study use secondary data which include annual agriculture credits guarantee funds and the total domestic food output obtained from CBN's statistical bulletin; the rural population data, obtained from the NBS's reports; and the average annual rainfall for the country, calculated from the annual rainfall in each state of the federation obtained from the Nigerian Meteorological Agency. The data were analysed using Ordinary Least Square approach.

Results: The results show a robust Adjusted R-square of about 86.3 percent. The value of t-Statistics of each of the explanatory variables shows 3.0323 for ACGSF, 6.8480 for RP and 2.5418 for AAR, indicating that the explanatory variables are statistically significant in explaining domestic food supply (DFS) in Nigeria. Meanwhile, the results give a coefficient of 0.14454 for Agricultural Credit Guarantee Scheme funds (ACGSF), 7.17082 for rural population (RP) and -1.4870 for the annual average rainfall (AAR). It implies that a change of one percent in Agricultural credit facility to the farmers in the agricultural sector, will bring about a change of about 0.14 percent, 7.17 percent and 1.48 percent respectively, in domestic food supply in Nigeria.

Conclusion: it is observed that there has been increase in the trend of agricultural credits guarantee funds to the farmers within the period of observation, with an average growth of 573.8 percent compared to the average growth of 59.25 percent in the domestic food supply

in Nigeria, and the changes in the agricultural credit guarantee fund to the farmers has a significant and impact on the domestic food supply.

Recommendation: Based on the finding, it is recommended that the government should encourage agri-business, and the youths, especially fresh graduates be equipped to practice scientific farming. This would greatly improve agricultural production and hence increase food supply in Nigeria.

Keywords: Food Supply, Agriculture, Credit, Rural, Poverty

1. INTRODUCTION

1.1 Background of the Study

The position of agriculture as the bedrock for the development of other sectors can never be overemphasized. This is also supported by the World Bank assertion that consumption based poverty lines are directed to physical measures of relative wellbeing. The inability to attain minimal standards of consumption to satisfy basic physiological needs is often termed as absolute poverty or deprivation. It is most directly expressed in not having enough to eat. These statements also re-confirmed the assertion by Xenopho, 440-355 BC in Stuart, 2003:

"While agriculture prospers all other arts alike are vigorous and strong, but where the land is forced to remain desert, the spring that feeds the other arts dried up" (Xenopho: 440-355 BC. in Stuart, 2003).

Among the people of West Africa, it is believed that when the problem of hunger is resolved, a major part of poverty has been eliminated, hence any effort towards eradicating hunger is a target towards alleviation of poverty.

In many parts of the world's poorest countries, food accounts for more than half of household expenditures, and any increase in food prices seriously reduce both access to food and the ability to purchase other necessities. When there is increase in domestic food supply, nutrition and health improve, which in turn promotes productivity. At the same time, it decreases a country's dependence on imported food, which often cannot be obtained without sufficient and stable levels of foreign exchange (Jemaneh and Okyere, 2012).

According to estimates of the Food and Agriculture Organization of the United Nations, in 2010 there were 925 million hungry people in the world, of which 239 million of them were in Sub-Saharan Africa. As a cause of poor health, low levels of energy, and even mental impairment, hunger can lead to even greater poverty by reducing people's ability to work and learn, in turn leading to even greater hunger.

50 Today, Africa has the unfortunate reputation of being the only continent that cannot
51 produce enough food to feed its own citizens, yet it remains the continent with the greatest
52 opportunities to provide solutions to global food insecurity. The continent is blessed with
53 abundant land, including almost 60 percent of the world's uncultivated arable land. Even
54 within existing cultivated land, doubling of cereal yields on the millions of hectares cultivated
55 by smallholder farmers would turn Africa into a major food surplus region.

56 According to Cuesta, Edmeades and Madrigal, (2011), food security is a complex
57 phenomenon involving multiple factors. In Nigeria, domestic food supply challenge could be
58 linked to a number of trends including: the climatic conditions; growing urbanization and
59 movement of labor away from rural areas; and agricultural credit facility (loan).

60 Most agricultural activities lies in the rural areas, hence food supply will depends on
61 the rural population who are the main producers of food for the entire population. However,
62 due continuous movement of people, particularly, the youths, to the cities in search of
63 lucrative jobs, very few people are left to work on farms.

64 About 90% of these farmers in the rural areas engage in subsistence agriculture and
65 lack sufficient funds to operate, expand their business, or even practice mechanized farming,
66 with modern equipment like plough, tractors and other labour saving devices. Hence, they
67 would not be able to produce enough food to feed the ever growing population of Nigeria.
68 There is insufficient and limited sources from which funds can be obtained by farmers in the
69 rural areas. Just a third of the credit needs in rural areas are met by formal lending agencies,
70 which has led to the dominance of informal credit associations like the credit and drift
71 cooperatives, community development associations and moneylenders. The reasons for the
72 inability of the formal institutions to meet the credit needs of the rural farmers in Nigeria,
73 according to Obeta (1992), include the control of the institutions through their headquarters
74 located in the cities, which put them out of touch with the needs of subsistence farmers.
75 Also, untimely release of funds, cumbersome loan procedures and high interest rates limit
76 farmers' access to loans from this sector. In light of the substantial resources possessed
77 formal lending sources relative to inadequacy of credit, there is a need to evolve a means of
78 stimulating formal credit availability to rural areas

79 In order to revamp the agricultural sector, the federal government of Nigeria had
80 embarked on and implemented several agricultural policies and programmes some of which
81 are defunct or abandoned, and some restructured while others are still in place. In a broad
82 sense, the objectives of the new agricultural policy include: The achievement of self-
83 sufficiency in basic food supply and the attainment of food security; Increased production of
84 agricultural raw materials for industries; Increased production and processing of export
85 crops, using improved production and processing technologies; Generating gainful

86 employment; Rational utilization of agricultural resources, improved protection of agricultural
87 land resources from drought, desert encroachment, soil erosion and flood, and the general
88 preservation of the environment for the sustainability of agricultural production; Promotion of
89 the increased application of modern technology to agricultural production; and, Improvement
90 in the quality of life of rural dwellers (FGN, 2001). However, all these objectives cannot be
91 achieved **without adequate** investment in agricultural sector.

92 Apart from the annual government expenditure on agriculture, several policies were
93 also put in place to improve the agricultural sector so as to increase food production in the
94 country. Among these policies is the agricultural credit guarantee scheme fund (ACGSF) put
95 in place to assist farmers. The scheme started operation in 1978 with an initial capital base
96 of **one hundred million naira** (N100 million), which has now been raised to N3 billion, shared
97 in the ratio of 60:40 between the Federal Government of Nigeria and Central Bank of
98 Nigeria. The aim is to share the risks of banks in the agricultural lending and hence
99 encourage the Central Bank of Nigeria to continue extending credit to the agricultural sector
100 (CBN, 2011).

101 Within the period of observation, according to the **Central Bank of Nigeria (2011)**,
102 about N36.7 million agricultural credit facility was granted to the farmers in the sector in
103 1981, which decreased slightly by about 13.3 percent to N31.9 million, and before rising by
104 about 25.1 percent to attain N39.9 million in 1983. This trend in credit facilities to farmer
105 within the period followed the government's green revolution **programme introduced** in 1980
106 with the aim of ensuring self-sufficiency in food production and to introduce modern
107 technology into Nigerian agricultural sector through introduction of modern inputs such as
108 high yielding variety seeds, fertilizer and tractors.

109 The agricultural funds to the farmers attained N48.2 million in 1985, and rose sharply by
110 about 114.5 percent in 1990 to attained N103.3 million, and further increased to N166.6
111 million or 61.17 percent in 1995. The sharp increase in the credit facility to farmers within
112 this period could be linked to two government agricultural policies within the period, that is,
113 the **Directorate of Food, Roads and Rural Infrastructures**, with the objectives among
114 others, to identify areas of high production potential for the country's priority food and fibre
115 requirement and to support production of such commodities along agro-ecological zones
116 within the context of one national market with unimpeded inter-State trade in farm produce.
117 By 2000, the agricultural credit guarantee fund for the farmers has attained N361.4 million or
118 an increase of 116.9 percent. There was a rocket shot in the agricultural credit guarantee
119 fund for the agricultural sector as it attained N9,493.8 million or an increase of 2,567 percent
120 in 2005, while in 2011, it increase slightly to attain N10,193.8million or an increase of about
121 7.4 percent. One of the government agricultural policies that could be attributed to the

upward shift in the agricultural credit facilities to the farmers within the period is the National Economic Empowerment and Development Strategy (NEEDS) with the aim of Improving agriculture through promoting the cultivation of improved, higher yielding crop varieties and provide extra support to agricultural research and training. It aims to encourage business interests to provide credit and supply and distribute agricultural inputs, such as seeds, fertilizers, and machinery. Silo complexes will be refurbished to increase the capacity of the food reserve programme and move closer to food security (National Planning Commission, 2004).

The domestic supply of food within the period of observation, however, cannot be said to follow the same trend as the credit facilities extended to agricultural sector by the Central Bank of Nigeria. For instance, total food supplied domestically was 57.06 million tons as at 1988 and rose by 20.26 percent, to attain 68.79 million tons in 1990. There was a further increase of about 41.9 percent in domestic food supply in 1995, and attained its peak in 2000 with an increase of about 152.97 percent. The domestic food supply decrease sharply by about 45.38 percent in 2005, and then slightly rose by about 35.82 percent in 2011.

Comparing the trend of agricultural credits guarantee funds extended to the agricultural sector with the domestic food supply within the period of observation, the highest rise in the fund was in 2005 with an increase of 2,567 percent, the same period there was a decrease of about 45.38 percent in domestic food supply. However, the domestic food supply attained its peak in 2000 with an increase of about 152.9 percent, when the increase in agricultural credit facility to the agricultural sector was about 116.7 percent.

Given the foregoing, the objective of this paper, therefore, is to critically examine the impact of the agricultural credit guarantee scheme funds on domestic food supply in Nigeria.

To this end, the paper is organized into five sections. Following this introduction is section II, which focuses on the reviews of relevant literatures and theoretical framework. Section III discusses the methodology. Section IV analyses and interprets the data, while section V summarises the findings and offer some policy recommendations.

1.2 Literature Review

This section discusses relevant literature and theoretical framework on the linkage between government expenditure and food supply. There have been many studies on government expenditure and food supply, and many researchers have directed the focus of their studies on government expenditure as well as food supply both within and outside Nigeria. For instance, Mapfumo (2012) investigates how government expenditure on agriculture affects economic growth and poverty reduction in Zimbabwe from 1980-2009, using a log linear growth regression model. The results from this study suggest that

157 spending more on agricultural research and development can improve economic growth and
158 ultimately reduce poverty. However, the major defect of this study is that it focused only on
159 Zimbabwe economy, which may not be applicable to Nigeria. More so, the study considers
160 the effect of agricultural spending on economic growth as well as poverty alleviation, and not
161 on food supply, as a dependent variable.

162 In Bolivia, Cuesta, Edmeades and Madrigals (2011), explores the reduction of food
163 insecurity in Bolivia by adopting a supply side approach to analyze the role of agricultural
164 spending on vulnerability to food security. The vulnerability to food here is captured by
165 welfare outcomes, weather conditions and agricultural potential for all 327 municipalities. An
166 econometric result from this study indicates that levels of public agricultural spending are
167 positively associated with high vulnerability.

168 Armas, Osorio, and Blanca (2010) analyzes the trends and evolution of public
169 spending in the agriculture sector in Indonesia, as well as its impact on the growth of
170 agriculture during the period 1976–2006. The result of the analysis shows that public
171 spending on agriculture and irrigation has a positive impact on agriculture growth, whereas
172 public spending on fertilizer subsidies had an opposite effect. Like Mapfuno's, this study
173 focused only on Indonesia's situation, hence may not be relevant to the Nigerian economy.
174 The study's use of disaggregate approach on the public agriculture spending with focus on
175 irrigation and fertilizer subsidies as the main explanatory variables for agricultural growth
176 may not be appropriate enough considering the fact that irrigation and fertilizer subsidies are
177 only few of the many variables that can explain agricultural output

178 In analysing the relationship between Agricultural resource and economic growth in
179 Nigeria, Olajide, Akinlabi and Tijani (2012), employ Ordinary Least Square regression
180 method and come up with the findings which indicate that a positive cause and effect
181 relationship exists between gross domestic product (GDP) and agricultural output in Nigeria.

182 Adofu, Abula and Agama (2012) employ the OLS regression technique to examine
183 the effects of government budgetary allocation on agricultural output in Nigeria. Their results
184 revealed that the government budgetary allocation to agricultural sector has a strong,
185 positive and significant impact on agricultural production in Nigeria. However, this study
186 considered only government budgetary allocation and commercial bank credit as
187 explanatory variable to agricultural output.

188 Udoh (2011), investigates the relationship between public expenditure, private
189 investment and agricultural output growth in Nigeria over the period 1970-2008. The error
190 correction model adopted reveals that increase in public expenditure has a positive influence
191 on the growth of the agricultural output.

192 Igwe and Esonwume (2011) narrow their study to a section of the country by
193 examine the factors affecting agricultural output, with a particular focus on the state
194 government expenditure on agriculture. The Ordinary Least Squares (OLS) regression
195 analysis employed in the analysis shows that total land area cropped, total annual rainfall
196 and total population were strong factors that significantly determined total crop output in the
197 state. Whereas the total land area and total annual rainfall were positive in their signs, the
198 total population was negative. However, since the study only focused on one out of thirty six
199 (36) states in Nigeria, hence it may not accurately represent the true situation of the country.

200 This study identifies some gaps in the literature reviewed, which it proposes to
201 address. For instance, though some of the earlier researchers study the effect of
202 government spending on agricultural output (Cuesta, Edmeades and Madrigals, 2011; and
203 Armas, Osorio, and Blanca, 2010), however, they focus on government spending as the only
204 explanatory variable for agricultural output. More so, they did not consider Nigeria in their
205 study. Some authors in Nigeria have also written on expenditure and agricultural output in
206 Nigeria (Olajide, Akinlabi and Tijani, 2012; Adofu, Abula and Agama, 2012; Udoh, 2011; and
207 Igwe and Esonwume, 2011). However, their studies reflect the effect of government
208 expenditure as the only explanatory variable for agricultural output in Nigeria. Though other
209 authors (Igwe and Esonwume, 2011) consider other variables like total land cropped, total
210 annual rainfall and total population as explanatory variables for crop output, however, the
211 study was limited to only a section of the country, and did not capture bank loans. Hence,
212 this study proposes to address these gaps. Using aggregated approach, this paper
213 considers agricultural credit guarantee scheme funds as an important variable that affects
214 food supply in Nigeria.

215 **1.3 Overview of Agricultural Credit Guarantee Scheme Fund**

216 In a bid to address the credit needs of the rural farmers, and improve domestic food supply
217 in Nigeria, the Agricultural Credit Guarantee Funds Scheme (ACGFS) was established by
218 the Federal Military Government under the Agricultural Credit Guarantee Scheme Fund
219 Decree 1977 (Decree No. 20) and as amended in 1988, with an initial capital base of one
220 hundred million Naira (N100, 000,000.00) distributed between the federal government (60
221 percent) and the Central Bank of Nigeria (40 percent). The scheme was designed to
222 encourage commercial banks to increase lending to the agricultural sector by providing
223 guarantees against inherent risk in agricultural lending. At inception, maximum loan to be
224 guaranteed was one hundred thousand Naira (N100,000.00) for individuals and one million
225 naira for cooperatives and corporate bodies. Such loans would require collateral. Collateral
226 would however be waived for loans below 5000 naira (Central Bank of Nigeria, 1990).

227 Most often, financial institutions require huge collateral from customers before loans are
228 granted to them, which is detrimental to farmers' efforts that may require such loans to
229 enhance their production. Hence, the ACGSF is aimed at reducing this dearth by
230 guaranteeing these farmers or other individuals involved in agricultural production when
231 seeking for loans from the banks. In case of default, the lending bank is expected to exhaust
232 all forms of loan recovery, including the realisation of any security pledged for loans, before
233 the ACGS pays the 75% of guaranteed loans in default (Central Bank of Nigeria, 1990). This
234 has made most financial institutions interested and secured in granting loans to agricultural
235 ventures.

236

237 The purpose of the fund is to provide guarantee in respect of loans granted by any bank for
238 agricultural purposes. Meanwhile, the Agricultural purposes in respect of which loans can be
239 guaranteed by the fund are those connected with:

240

- 241 • establishment or management of plantation for the production of rubber, oil
242 palm, cocoa, coffee, tea and similar crops;
- 243 • The cultivation or production of cereal crops, tubers, fruits of all kinds,
244 cotton, beans, groundnuts, sheanuts, benniseed, vegetables, pine-apples,
245 banantains;
- 246 • Animal husbandry, that is to say, poultry, piggery, cattle rearing and the like,
247 fish farming and fish capture;
- 248 • Processing in general where it is integrated with a least 50% of farm output
249 e.g. cassava to gari, oil palm fruit to oil and kernel, groundnut to groundnut
250 oil, etc.
- 251 • Farm machinery and hire services.

252

253 Since inception, there has been tremendous increase in the number of loans
254 guaranteed by the scheme from 341 loans (N11.28million) in the first year of operation in
255 1978 to 3,571 loans (N 218.60 million) in 2006, and as at 2010 the loans guaranteed by the
256 scheme has attained N6,567.3 million. Other incentive put forward by the scheme to achieve
257 towards the development of agricultural sector and thus, improve domestic food supply
258 includes the increase in the limit of the guarantee granted to individuals and corporate
259 bodies. For example, the limit granted to individuals was increased from N5, 000 to N20, 000
260 for individuals without collateral required. With collateral, the limit of the guarantee was
261 increased from N100,000 to N500,000. For corporate bodies and corporative societies, the
262 guarantee limit was increased from N1 million to N5 million (Efobi and Osabuohien, 2011).

263 However, 33 years after the establishment of the scheme, problem of adequate domestic
264 food supply in Nigeria remain unsolved. There is thus a need to evaluate the activities and
265 the performance of the scheme in relation to domestic food supply.

266

267 **2.0 MATERIAL AND METHODS**

268

269 **2.1 Sources of Data**

270 The main sources of the secondary data used in this study are the Central Bank of Nigeria
271 (CBN) published Annual statistical bulletin, and the National Bureau of Statistics (NBS),
272 Abuja. The data include: annual agriculture credits guarantee funds and the total domestic
273 food output obtained from CBN's statistical bulletin; the rural population data, obtained from
274 the NBS's reports; and the average annual rainfall for the country, calculated from the
275 annual rainfall in each state of the federation obtained from the Nigerian Meteorological
276 Agency.

277 **2.2 Model Specification**

278 Based on the foregoing analytical considerations of the study, literature review and
279 theoretical framework, the study adopts Igwe and Esonwume (2011) model with modification
280 which is presented below:

$$281 \text{DFS} = f(\text{AGCF}, \text{RP}, \text{AAR},) \dots\dots\dots (1)$$

282 In stochastic form equation (1) becomes:

$$283 \text{DFS} = \beta_0 + \beta_1\text{AGCF} + \beta_2\text{RP} + \beta_3\text{AAR} + \varepsilon \dots\dots\dots (2)$$

284 Where:

285 DFS = Domestic Food Supply

286 AGCF = Agricultural Guarantee Credits Funds

287 RP = Rural Population

288 AAR = Average Annual Rainfall

289 ε = Error term

290 Prior to estimation of the model, standard econometric tests, that is, stationary tests were
291 conducted to test for its stochastic properties through unit root tests in order to avoid
292 estimating spurious regression results, since estimating regressions using non-stationary
293 variables based on ordinary least square lead to spurious and inconsistent results
294 (Aiyedogbon, 2012).

295

296 **3.0 RESULTS AND DISCUSSION**

297

298 **3.1 Data Presentation**

299 Table 1 Annual Domestic Food Supply, Agricultural Credit Guaranteed Fund, Rural
300 Population and the Average Rainfall in Nigeria (1988 – 2011)

Year	Domestic Food Supply('000tons)	ACGSF (N'000)	Rural Population	Average Annual Rainfall in Nigeria (millimeters)
1988	57,006.0	126,346.9	61,295,390	1,427.6
1989	64,790.0	134,066.7	62,217,310	1,320.2
1990	68,630.0	103,395.2	63,116,180	1,386.2
1991	74,038.0	80,859.6	63,971,301	1,415.7
1992	79,309.0	93,391.8	64,806,560	1,354.7
1993	85,672.0	81,273.8	65,624,200	1,394.2
1994	95,014.0	106,901.0	66,427,220	1,402.4
1995	97,394.0	166,654.1	67,218,980	1,499.9
1996	102,863.0	227,664.5	67,998,940	1,480.6
1997	105,796.0	242,028.3	68,769,310	1,498.6
1998	109,652.0	220,288.5	69,539,400	1,346
1999	113,510.0	241,839.0	70,320,680	1,571.6
2000	246,382.0	361,449.0	71,120,910	1,267.2
2001	137,176.0	728,545.4	71,917,600	1,296.1
2002	142,286.0	1,050,982.3	72,732,140	1,458.8
2003	151,015.4	1,151,015.0	73,559,490	1,395.6
2004	126,133.2	2,083,744.7	74,392,260	1,338.3
2005	134,568.7	9,493,854.5	75,224, 960	1,372.0
2006	144,733.7	4,262,430.3	76,084,310	1,378.6
2007	154,311.1	4,425,461.5	76,943,790	1,443.4
2008	165,294.6	6,497,958.9	77,803,780	1,378.1
2009	175,507.3	8,328,565.8	78,665,330	1,472.5
2010	172,939.7	6,567,356.5	79,528,440	1,443.6
2011	182,778.6	10,193,847.3	NA	NA

Source: Central Bank of Nigeria and the World Bank

About N123.6 million agricultural credit facilities were granted to the farmers in the sector in 1988, which decreased by about 18.1 percent to stand at N103.3 million in 1990. It however, increased to N166.6 million or 61.17 percent and N361.4 million or an increase of 11.69 percent in 1995 and 2000 respectively. There was a rocket shot in the agricultural credit guarantee fund for the agricultural sector as it attained N9,493.8 million or an increase

307 of 2,567 percent in 2005, while in 2010, it decrease slightly N6,567.3 million or a decrease of
308 about 30.82 percent.

309 In Nigeria, within the period of observation, the Nigerian population as at 1988, the
310 population on Nigeria in the rural area was 61.2 million. Between 1988 and 1990, the entire
311 population grew by 5.5 percent to attain 94.8 million and the rural area population grew by
312 just 2.9 percent to attain 63.1 million. Further, the entire population grew by 13.6 percent to
313 attain 107.7 million and 13.09 percent to attain 121.8 million in 1995 and 2000 respectively.
314 However, the population growths in the rural area for the same period were 6.5 percent and
315 5.8 percent to attain 67.2 million and 71.1 million respectively. The entire population of the
316 country stood at 137.5 million or a growth of about 12.9 percent in 2005, while in 2010 the
317 entire population attained 154.5 million or a growth of about 12.3 percent. Meanwhile, the
318 rural population growths within the same period were 5.8 percent and 5.7 percent
319 respectively (World Bank, and Index Mundi, 2013).

320 Low and poorly distributed rainfall is another major barrier to agricultural
321 development in large areas of Africa. Average rainfall in the dry semi-arid areas of Sub
322 Sahara Africa is less than 700 millimeters per year, and when the rain does come, the rainy
323 season is very short. However, in Nigeria within the period of observation, according to the
324 Nigerian Meterological Agency rainfall statistical report, the mean annual rainfall in Nigeria
325 ranges between 1, 200 millimeters and 1, 500 millimeters per year.

326 3.2 Data Analysis

327

Table 2: Results of Stationarity (unit root) test.

Variables	ADF-Statistic	Critical Values	Order of Integration
LOGDFS	-7.478697	1% = -3.769547 5% = -3.004861 10% = 2.642242	Stationary at first difference
LOGAGCF	-4.11105	1% = 3.788030 5% = 3.012363 10% = 2.646119	Stationary at first difference
LOGRP	-4.624973	1% = -3.769597	Stationary at first

		5% = -3.004861 10% = 2.646119	difference
LOGAAR	-6.208299	1% = -3.788030 5% = -3.012363 10% = 2.646119	Stationary at first difference

Source: Computed from Eview 4.0

The stationarity test is employed to investigate the time series properties of the data to be analysed, in order to establish whether the variables are stationary or non-stationary. The use of non-stationarity series may lead to spurious regression where, otherwise, unrelated series may be presented as related.

The unit root test result from the table 2 above indicates that log DFS is stationary at first difference at either 1 or 5 percent confidence levels. More so, stationarity was achieved at first difference for the log of AGCF, the log of RP, and the log AAR at 1 or 5 percent confidence level. The result implies that the joint probability distribution of these variables do not change when shifted in time, as such, the mean and variance, if present, are also expected not to change over time.

Table 3: Regression Result

Dependent Variable: DFS
Method: Least Squares
Date: 10/27/13 Time: 12:16
Sample: 1988 2011
Included observations: 24

Variable	Coefficient	Std. Error	t-Statistic	Prob.
ACGF	-0.144548	0.047669	-3.032304	0.0066
RP	7.170827	1.047136	6.848035	0.0000
AAR	-1.487072	0.585034	-2.541858	0.0194
C	-55.67417	11.16913	-4.984647	0.0001
R-squared	0.880831	Mean dependent var	11.66833	
Adjusted R-squared	0.862956	S.D. dependent var	0.372391	
S.E. of regression	0.137857	Akaike info criterion	-0.974183	
Sum squared resid	0.380093	Schwarz criterion	-0.777841	
Log likelihood	15.69020	Hannan-Quinn criter.	-0.922093	
F-statistic	49.27638	Durbin-Watson stat	2.086502	
Prob(F-statistic)	0.000000			

$$\begin{aligned}
 \text{DFS} &= \beta_0 + \beta_1 \text{ACGSF} + \beta_2 \text{RP} + \beta_3 \text{AAR} + \varepsilon \\
 &= 55.67417 - 0.14454 \text{ACGSF} + 7.17082 \text{RP} - 1.48707 \text{AAR} \\
 &\quad (4.9846) \quad (3.0323) \quad (6.8480) \quad (2.5418)
 \end{aligned}$$

3.3 Findings and Discussion

The results show a robust Adjusted R-square of about 86.3 percent, indicating that about 86.3 percent change independent variable (DFS) is explained by the explanatory variables (ACGSF), RP, and AAR. The value of t-Statistics of each of the explanatory variables shows 3.0323 for ACGSF, 6.8480 for RP and 2.5418 for AAR, while the F-statistic value is high at 42.2764. Meanwhile, with a coefficient of 0.14454 (ACGSF), 7.17082 (RP) and -1.4870 (AAR), it implies that a change of one percent in Agricultural credit facility to the farmers in the agricultural sector, will bring about a change of about 0.14 percent, 7.17 percent and 1.48 percent respectively, in domestic food supply in Nigeria.

Investigation in this study reveals that the Agricultural Credit Guarantee Scheme Fund (ACGSF) has negative and statistically significant impact on the domestic food production. The negative impact can be attributed to a long delay in disbursement of loan to the farmers in the rural areas. Since most of the banks are located in the cities, in some cases where loans are approved, it arrives too late for it to fulfill the purpose for which it was intended.

The findings in this study also show that rural population has a positive and statistically significant impact on the domestic food population. Since most agricultural activities lies in the rural areas, domestic food production will depends on the population of the rural dwellers who work in the farm to produce food for the entire population. An increase in the population of the rural dwellers who engage in farming will leads to increase in domestic food supply. However, continuous rural-urban migration will reduce rural population, and very few people would be left to work in the farm, which might reduce domestic food supply.

Lastly, the findings reveal that the average annual rainfall within the period of observation shows a statistically significant impact on domestic food supply in Nigeria. Climate change compounds the challenges confronting agriculture. For instance, changing and erratic rainfall patterns make it difficult for farmers to plan their operations, may reduce the cropping season and can lead to low germination, reduced yield and crop failure, as observed by Nwajiubah, (2012)

4. CONCLUSION

Based on the analysis carried out on the available data, it is observed that there has been increase in the trend of agricultural credits guarantee funds to the farmers within the period of observation, that is, 1988 -2011, with an average growth of 573.8 percent compared to the average growth of 59.25 percent in the domestic food supply in Nigeria, and these changes in the agricultural credit guarantee fund to the farmers has a significant impact on the domestic food supply.

Based on this finding, it is recommended that government should not only increase the credit facility made available to the farmers, but the utilisation of the fund by the farmers should also be monitored so that fund is not diverted away from the target. More so, government and the private sectors should invest more in agribusiness to improve domestic supply of food in Nigeria. Nigerian farmers should also be encouraged to adopt modern mechanized farming by providing them with modern farm implements. Ploughs, ridgers and other farm implements should be made available to them at a minimum cost possible. This should not necessarily be done by the government alone, but individuals and private organizations should also get involved in order to achieve more in the area of agricultural production and to attain food sufficiency in Nigeria. Schools and organisations should take a lead in collectivization agriculture where sciences are applied to farming.

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