

# Food Security and Technology Nexus in Nigeria: An ARDL Approach

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**Abstract**—In this paper, we examined the level of technology, (quite low in developing countries, especially Nigeria) and how improved technological know-how can help in achieving food security. The indicators of food security utilized include: prevalence of food inadequacy, value of food production, among others. Regression analysis was engaged in investigating the important role of technology on food security using ARDL (Auto Regressive Distributed Lag). The results, among others, showed that in Nigeria, there is a long-term relationship between the indicators of food security and technology. In the event of distortion, the speed of adjustment from the short-run is rather low but significant. Some policy options to enhance the level of food security are documented in the study.

**Keywords**—Food security; Agricultural machinery; Institutional quality; Economic growth; Cultivable land

## I. INTRODUCTION

Saying that Nigeria is highly endowed with abundant resources is stating the obvious; hence, it is rather paradoxical that the country is one of the largest food importers in Africa [1]. Its abundance resources and continued economic growth notwithstanding, the issue of undernourishment is still prevalent in Nigeria and has, on the average, increased in recent times. Approximately, 70% of the Nigerian population lives on less than US\$1.25 per day. In 2012 Global Hunger Index (GHI) ranking, Nigeria was the 40<sup>th</sup> out of 79 and 156<sup>th</sup> out of 187 on the 2011 Human Development Index (HDI) by United Nations Development Programme (UNDP) [2]. The agricultural sector is still an important sector of the Nigerian economy as it employs more 70% of the country's total labour force especially in the rural areas and contributes about two-fifth to the country's Gross Domestic Products (GDP) [3]. Nigeria, which is previously known to be one of the world's biggest producers of yam, cassava and other major food crops, is now said to be food-insecure relying on imported food to meet a number of her nutrient needs [2].

Most of farmers in rural areas of Nigeria engages in peasant agriculture, farms on a small scale and uses traditional implements, which make farming activities tedious and unattractive to the youth. The aftermath is low production, reduced supply of food. Other factors that are militating

against food availability include: poor infrastructure and social approximately, there are 20 million farmers in less than 20% of the country's total population. Households that have the financial wherewithal to evade extreme poverty seldom experience chronic hunger; while poor houses not only experience the most from unceasing hunger, but are also the section of the population most at risk during food deficiencies and famines.. The major crops like soya, cotton and maize that are currently grown and are intended to stable food industries in a country. In Nigeria, there is little or no genetically modified (GM) research and development companies on staple food crops This deprive farmers from saving seeds to plant the following seasons.

Food security exists when people, at all times, have access to adequate, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life [5]. In recent times, environmental and economic concern has exacerbated the problem of food insecurity. A feasible result of global warming assumes that major parts of the African continent will experience massive climatic changes and this will impose severe consequences for the African continent which have more than 75% of the people that depends on agriculture [6]. Frequent changes of food prices alongside with the changes in climate will impose additional brunt on the improvement [7]. Food security goes beyond poverty issues; poverty issue; it can be broader seen and taken as it evolves the general food scheme and impacts on all individuals in some ways all: whether families have sufficient food.

Given the above background, this study, therefore, examines how technology can influence food security in Nigeria. The role of institutional framework can play in enhancing food security is also investigated. This is given the recent empirical observations on that most activities by economic agents can be predicated upon the nature of institutional framework that are operational in the said system [8] [9].

The study is structured into sections: following this introduction is brief review of literature and conceptual framework. Next to it is the formulation of the empirical model used in the study; empirical results from emanating

from the estimation techniques and discussion; and conclusion with some recommendations for policy and further research, in that order.

## II. BRIEF REVIEW OF LITERATURE AND CONCEPTUAL FRAMEWORK

Food security can be said to occur "when all people at all times have access to sufficient, safe, nutritious food to maintain a healthy and active life"[10]. [5].for a family, food security simply implies that all members of the family have access to sufficient food at any given point in time for healthy living[11].Global population by 2050 will be above 9 billion. Food demand will be driven by population explosion and changes in climate in the coming decades Technology options are many, but transparent evidence-based information has been inconclusive or scarce. In Africa, more than 35% of the total population are undernourished, which is the world's most prevalence 33% [12].

Recently, in SSA especially, Nigeria food insecurity has been on the increase which is a source of major concern to African governments Food and Agriculture Organisation estimates the total number of malnourished persons leaving in SSA countries increases from 165.5 million in 1990-1992 to 198.4 million in 1999- 2001 [5].

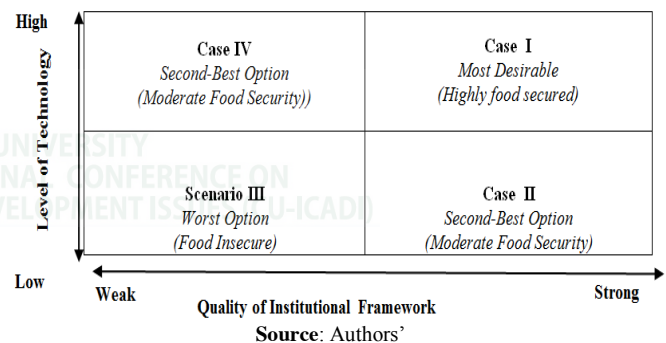
Institutions can be taken as the rule of the game or the regulators of the rule. In this study, the former conceptualisation is followed based on the fact that even the latter (the regulators) require the former (the rules) to effectively function [8]]. Thus, institutions are essential for the attainment of food security in any country –Nigeria inclusive. Institutions are government policies and directives towards achieving a particular goal [13]. Stemming from above, government can undertake some policies such as the funding of agricultural policies like the Agricultural Guarantee Scheme Fund (AGSF), provision of agricultural equipment like tractors to the farmers and educating them on their uses. This will enhance food production and thereby reduce food insecurity in the Country. Example of such policy is the Operation Feed the Nation (OFN) during Obasanjo's regime.

A country that is food-sufficient is one where food is made as human right to enhance food access A country like Nigeria that is, it is widely believed that greatly endowed in resources, there is indeed a lot of food and it is believed that the issue of hunger results not from shortage of food but mainly form from the misdistribution of food. Allocated according to dietary need, the lacto-vegetarian the supply of food supply alongside with the production reared animals will support up to 85% of the Nigeria's modern population. Researchers' finds that if poor nations and their citizens had enough purchasing power, more food can be produced: the country Nigeria has unutilised ability for the production of food. Without citizens purchasing power, food would not be available to the people except given as aid. Thus, it is suggested that that for Nigeria that has a than doubled population, the availability of food just have to be increased more than two-fold to commensurate food requirements and expectation of improved diets of a food sufficient nation[12].

Household income can also influence food security. Put differently, household income can directly affect the level of food security [13].The Sustainable Development Goals (SDGs) which succeeds the Millennium Development Goals (MDGs) envisaged that by 2030 there would be enough food for all (food security). Food insecurity and hunger are forerunners to nutritional, health, human and economic development problems of any nation. [14].How far these goes can be realised will be unfolded in the process of time just as the MDGs were not adequately attained in Nigeria the dawn of the end period of December 2015. For instance, in Africa more than 75million of its citizen have little or no access to food which is required to meet daily energy needs [15].

To better situate the key arguments in this study, Figure 2.1 presents the possible outcomes (options) that will be emanate from the combination of the level of technology and institutional quality, *ceteris paribus*. Taking it from the top right in Case I and going clockwise direction, it couldbe observed that high level of food security will be feasible when there is the deloyment of high level of technology coupled with stong institutional framework. This is the most desirable quadrant.

Figure 2.1: Typology of Food Security (Interaction of Technology & Institutions)



However, there could be some constraints ranging from resources (humn and material), among others, which will make a country to operate at Case II or Case IV. Both cases are somewhat similar as they involve using high technology or strong institutions depending on which one is cheaper based on their production possibility frontiers. The outcome of these two cases will be moderate level of food security. The last case, which is the least desirable, is the situation when there is low level of technology as well as weak institutional framework. The end of such combination is food insecurity.Though it is least food securitylevel, the occurrence of both weak institutions and low technology will make country to be at that level inadvertently.

## III. THEORITICAL FRAMEWORK

This study draws insight from Solow's technological change growth model which provides a useful framework for analysing the need of technony in the agricultural sector for production increase [16]. Solow's theory relates to explanation of the determinant of growth in the production of outputs

including those for the agricultural sector. In this study, we presume that the quantity of agricultural output in an economy is a function of the amounts of technological inputs. In this wise, given detailed data for an economy's sub-sectors, it will be possible to "explain" (model) the food security by the growth in quantities of food production<sup>1</sup>. Any residual is attributed to "technological change" that is, shift in the food production not due to technological inputs. Solow's result challenged households who thus had seen savings and capital accumulation as the main determinants of food security.

There are many factors that influence food production, and this number increase as the view is expanded from technological change to include equitable growth and wellbeing. Some of such factors are savings, technological change, innovation systems, human development, economic efficiency, infrastructural and services, governance and security [17].

[18] used multi-econometric method to assess food security is affected by technology impacts. In the study, the author assessed the impact of trade liberalisation on the Nigerian food production. It was found that contrary of Linda's postulation that trade openness is advantageous but in Nigeria the reverse is the case. The study recommends that for the economy to take advantage of trade liberalisation, restriction should be placed on imported food, control of food prices and improve local food production.

[19] A research was conducted on the effects of climate change on Agricultural productivity in Nigeria; it was found that food productivity is crucial, given its effect in changing livelihood patterns in the country. The finding confirmed that the rate in food productivity was higher from 1981 to 1995, which was followed by lower technological rate between 1996 and 2000. Furthermore, there was variation in the trend or pattern of electricity supply. Variation in Electricity was revealed to have adverse effect while rainfall change exerts a positive on food productivity. However, previous year rainfall was negatively significant in affecting current years in food productivity. In their study they found out that in Nigeria, agricultural productivity is critical, given its impact in changing feeding patterns in the country.

#### IV. METHOD OF ANALYSIS

The methods of analysis engaged in the study involve three main approaches, namely descriptive and econometric techniques. The descriptive method was employed using tabular representations to show some indicators of food security and Technology in Nigeria. While the econometric analysis utilised econometric model that was fitted into data using the approach of Auto Regressive Distributed Lag (ARDL). Co-integration and Vector Error Correction (VEC) techniques were engaged with a view to estimating the long-run relationship between the indicators of food security and technology.

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Food production will affect food availability, which is an essential 'pillar' of food security. Others (not covered in this study) include affordability and utilisation

#### A. The Econometric Model

The model of the study assumed a functional relationship between indicators of food security and its possible determinants. It hinges on the theoretical underpinning of the Solow growth model, which has technical progress as basic explanatory variables that could explain production capacity of a country, especially in the agricultural sector. The model also allows the incorporation of other variables, in this case, indicator of technology. Other explanatory variable considered essential in the model are: electricity generation and distribution because it has been noted as a major driver for the processing of food [20]. Other explanatory variables which were considered essential include: institutional framework (*instfram*) captured by the average value of two indicators (notably: civil liberty and political rights), growth rate of per capita gross domestic product (*pgdpgr*), land available for production (*Lucp*).

Generally, institutional framework can influence the level of food security as it has been said that the quality of a country's institution can determine the extent of growth in food production [21]. Thus, food security can be related to the aforementioned explanatory variables, namely: technology, infrastructure captured by Electricity power distribution loss (as a percentage of total power output (EPDL), institutional framework.

*Tech*: Technology usage in the agriculture is proxied by two indicators, namely: Agricultural Machinery and tractors (*amt*) and agricultural machinery (tractors) per 100 square of arable land (*amtl*)

*Lucp*: land tenure system i. e, Availability of land under food crop production. Arable land helps to increase food production thereby increasing the availability of food [22]

*Instfram*: Institutional framework. It is measured by taking the average of the two measures of institutions in 2015 Freedom House dataset, namely: political rights and civil liberties. The choice of this source is based on the fact that it covers a long period of time (1978-2015). They measure a broad state of freedom in a country, which is vital for food security. They are reported on a ratio of 1 to 7; a rating of 1 indicates the highest degree of freedom and 7 the least degree of freedom. Following the footsteps of [23], this study transformed the data in a way that higher values will mean better institutional quality and as a result the transformed values ranged from 1 (worst) to 7 (best). This is to aid interpretation of results. Thus, an average value of 1.0 to 2.5 can be considered not free (weak institutional framework); 3.0 to 5.0, partly-free (moderate institutional framework); and 5.5 to 7.0, Free (strong institutional framework).

*Epld*: Electricity power distribution and loss (% of total power output). Power outage affects the processing of agricultural outputs.



The model can be simplified explicitly as:

$$Foodsec_t^K = f(tech^j, lucp, insfram, epdl, gdpgr) \quad (1)$$

Equation (1) can be represented in an econometric form as:

$$food\ sec_t^K = \alpha_0 + \alpha_1 tech_t^j + \alpha_2 lucp_t + \alpha_3 insfram_t + \alpha_4 epdl_t + \alpha_5 gdpgr_t + e_t \quad (2)$$

Where  $Foodsec^K$ : Indicators of food security. This represents two equations: Average value of food production ( $Avfp$ ) and prevalence of food inadequacy ( $pfi$ ) as indicators to measure food security. Thus,  $K=1$  and  $2$ .

$Gdpgr$ : growth rate of per capita gross domestic product (pgdgr).

$e$ : Error terms that is expected to be  $iidN(0, \sigma^2)$ .

The apriori expectation is that  $\alpha_i > 0, i = 1, 2, 3 \& 5 > 0$ , while  $4 < 0$ . Thus, increase in the explanatory variables (except  $epdl$ )

$$\begin{aligned} \Delta foodsec_t^K = & \beta_0 \\ & + \sum_{t=1}^n \beta_1 \Delta tech_{t-1} + \sum_{t=0}^n \beta_2 \Delta lucp_{t-1} + \sum_{t=0}^n \beta_3 \Delta insfram_{t-1} + \sum_{t=0}^n \beta_4 \Delta epdl_{t-1} \\ & + \sum_{t=0}^n \beta_5 \Delta pgdgr_{t-1} + \gamma ECM_{t-1} + e_t \end{aligned} \quad (3)$$

Where:

$\Delta$  represents the difference operator and the  $i$  is the error correction term.  $\gamma$  shows the speed of adjustment from the short-run to the long-run.

To empirically analyse the dynamic interactions amongst the variables of interest, the model was estimated using ARDL

$$\Delta foodsec_t^K = \beta_0 + \beta_1 tech_{t-1}^j + \beta_2 \Delta lucp_{t-1} + \beta_3 \Delta instfram_{t-1} + \sum_{t=1}^n \beta_4 \Delta epdl_{t-1} + \sum_{t=0}^n \beta_5 \Delta pgdgr_{t-1} + \mu_t \quad (4)$$

In ARDL estimation, it is usually essential to ascertain whether the variables are co-integrated by restricting the coefficients of the lagged level variables to be equal to zero (0). Therefore, the null hypothesis ( $H_0$ ) of no cointegration is stated as:

$$H_0: \beta_1 = \beta_2 = \beta_3 = \beta_4 = \beta_5 = 0 \quad (5)$$

Equation (5) can be tested against the alternative hypothesis of the presence of cointegration among the variables as:

$$H_1: \beta_1 \neq \beta_2 \neq \beta_3 \neq \beta_4 \neq \beta_5 \neq 0 \quad (6)$$

The above test can be carried out using F-statistics and asymptotic non-standard distribution variables to determine whether variables are  $I(0)$  or  $I(1)$ . If the calculated F-statistics lies above the upper level, then the null hypothesis is not accepted [22]. Cointegration was done prior to the estimation of the ECM by comparing the trace statistics and the maximum Eigen-values against the critical values at a given level of significance (1, 5 or 10%). If the former is greater

is expected to enhance the rate of food security, *ceteris paribus*.

### B. Estimation Techniques

To estimate the above formulated model, the study used time series data from 1990 to 2014 where there is availability of data for the variables. STATA software (version 13) was used in the estimation process. The estimation used logarithmic transform some of the variables because it brings the variables to a more comparable form and also helps to reduce issue of heteroscedasticity [10]

technique. The ARDL can be performed without a consideration of the order of integration of the series. In addition, the ARDL can be carried out with small sample and, most importantly, it provides an unbiased long-run estimate and valid t-statistics that are applicable even when some of the regressors are endogenous, (2010). Thus, the ARDL representation is shown as:

than the latter, then the null hypothesis is rejected and there is evidence of a long-run relationship among the variables.

Variables that are not in rate and index are used in their logarithmic form to bring the variables to a more comparable form and also help to reduce issue of heteroscedasticity [9].

## V. RESULTS AND DISCUSSION

### A. Descriptive Analysis

This sub-section presents and discusses data used for analysis of the role of technology on food security in Nigeria. The indicators of food security that are discussed in this sub-section include: average value of food production and prevalence of food inadequacy. While the indicators of Technology are agricultural machineries tractors (AMT, AMTAL), electricity power distribution and loss (EPDL), growth rate of gross domestic product (GDPGR), Population (POP), and Institution framework (INSTFRAM) as obtained from World Development Indicators (WDI), Food and Agriculture Organisation (FAO) and Freedom House.

The results from descriptive analysis are reported Table 5.1.

Table 5.1: Summary Statistics of Variables (1990-2014)

Variables	Mean	Standard Deviation	Minimum	Maximum
Lavfp	5.3062	0.5822	5.1533	5.4161
Llucp	16.638	0.1627	15.9587	16.7813
Amatl	31.8567	6.8208	20.2357	48.5659
Lamt		0.1967	9.5396	10.1186
Pgdpr	3.0543	6.4919	3.1185	30.34408
Aveinst	3.24	0.9478	1	4
Ecpdl	27.8666	13.3537	5.8654	43.8374

Source: Authors' Computation

Institutional framework in Nigeria in terms of political rights and civil liberties can be considered partly free/moderate. The implication of the above finding is strong institutional framework tend to help boost food security weak institution weaken food security. In terms of population, as population increases without a correspondence increase in food production leads to food insecurity because, more people tends to chase fewer food available.

**B. Econometric Results**

This sub-section reports and discusses the empirical results from econometric analyses, notably: cointegration and Vector Error Correction (VEC) technique [11]. The stationary pre-testing was not carried out given the fact that analysis with vector autoregressive (VAR) technique does not necessarily require stationary based on the fact that VAR models used variables in their differenced form [11].

From the results in Table 5.2, the null hypothesis is rejected at 5% level. The table equally reveals that there are at least three Cointegrating equations. This means that the variables are compatible in the long-run. In effect, when there is short-run disturbance there is tendency of the variables to return to equilibrium in the long-run. The implication of this is that institutional framework and electricity power supply are relevant in explaining the variations food security in the long-run. Given the finding that at least one Cointegrating equation exists, as shown in Table 5.2

Table 5.2: Cointegration Test

Max. Rank	EigenValue	Trace Statistics	Critical (5%)	Value
0	-	163.4858	94.15	
1	0.95647	91.3991	68.52	
2	0.87708	43.1869	47.21	
3	0.54856	24.8950	29.68	
4	0.52212	9.9119	15.41	
5	0.25957	0.9997	3.76	

Source: Authors' Computation

Table 5.3 Cointegrating Equation

Lavfp	Lamt	Llucp	Gdpgr	aveinst	Ecpdl
Coef.	-0.2422*	0.4747*	-0.0063*	0.03088*	-0.0039*
(P-value)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Lavfp	Llamt	Llucp	Gdpgr	aveinst	Ecpdl
Coef.	-0.0187*	3.28613*	-0.1167*	0.117*	-0.00885*
(P-value)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Pfi	Lamt	Llucp	Gdpgr	Aveinst	Ecpdl
Coef.	91.3890*	8.6793*	-0.8194*	-0.810*	0.6887*
(P-value)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Pfi	Amatl	Llucp	Gdpgr	aveinst	Ecpdl
Coef.	-3.515*	317.472*	-0.4585*	25.932*	-0.2745*
(P-value)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)

Source: Authors' Computation

Note: \*, \*\*, \*\*\*Means significant at 1,5 and 10%,respectively. The Lag Selection was based on Akaike Information Criterion (AIC),Schwarz Information Criterion (SIC), and Hannan-Quinn Information Criterion (HQIC).

From the cointegrating equations reported Table 5.3, it is obvious that the chosen explanatory variables are statistically significant in determining the role of technology in food security in Nigeria.

The overall statistics in Table 5.4 point to the fact the regressors are able to account for over 75% variations in food security. Thus, institutional framework together with electricity, machineries, arable land, population, per capita GDP growth rate jointly explains the rate of food security in Nigeria. The variables were significant at varying levels (1, 5 or 10%) and coefficients indicate the levels at which they account for rate of change in the indicators of food security.

Table 5.4: Estimates from VEC Technique

Regressand →	D_Lavfp	D_Lavfp	D_pfi	D_Pfi
Regressors ↓				
ECterm	-0.40280* (0.000)	-0.102* (0.000)	-0.024** (0.052)	0.0034** (0.043)
Lavfp(LD)	0.0074 (0.750)	-0.201 (0.412)	0.408 (0.155)	0.660* (0.000)
Lamt (LD)	0.3959*** (0.093)		-17.217 (0.144)	
Amatl(LD)		0.0009 (0.191)		0.0039 (0.870)
Llucp(LD)	0.0182*** (0.079)	0.122 (0.119)	0.734 (0.614)	0.535 (0.748)
Gdpgr(LD)	0.0017* (0.002)	0.0008*** (0.054)	0.0199 (0.389)	0.080 (0.935)
Aveinst (LD)	0.0050** (0.047)	0.0041 (0.513)	0.0666 (0.748)	0.1008 (0.613)
Ecpd (LD)	-0.0015*** (0.076)	-0.0014** (0.037)	-0.0236 (0.196)	-0.0106 (0.611)
Adj. R-sq	0.6557	0.4518	0.8491	0.8297
AIC	1.9213	14.7888	8.1172	21.8258
HQIC	2.5794	15.4469	8.7752	22.4839
SBIC	4.5380	17.4054	10.7338	24.4424

Sources: Author's computation

Notes \*, \*\*, \*\* means significant at 1,5 and 10%, respectively. LD signifies that they were lagged and differenced. The probability values are in parenthesis. Constants and a number of other statistics are not reported due to space.

### C. Implications of Results

The result above revealed that agricultural machineries (tractors and tractors per 100 sq km of Arable Land), Power supply (Electricity) (% of output) and Land under Crop Production (hectares) exert a positive and significant influence on Average value of food production, except Institutional framework which exerts a negative influence. From their coefficients, it could be inferred that a proportionate increase in Average Value of Food Production, Agricultural Machinery (tractors), Agricultural Machinery (tractors per 100 sq.km of Arable Land), Electric Power Transmission and Distribution (% of output) Land under Crop Production (hectares) will result to about 0.41, 0.30, 0.08 and 0.84 proportionate increase respectively in food security. On the contrary, Institutional frameworks of the country were found to have a negative effect on food security in Nigeria, consequent upon their statistical significant inverse relationship. This implies that a proportionate decrease in Institutional frameworks of the country will bring about 0.2 decreases in the Country's level of food security.

### VI. CONCLUSION

This study, which was motivated by the expedition of making contribution to research efforts on food security has become a global change, the examined the influence of technology on food security in Nigeria using time-series data (1990-2014). The results from descriptive, statistical and econometric analyses confirms that institutional framework, technology are very essential in explaining the rate of food security in Nigeria. Several other findings were elucidated in the study.

It was noted that the availability of arable was one of the major factors to increase food production to counter the plague of food insecurity. This is very imperative for Nigeria given her abundant land space, which can be adequately cultivated for food production process through active productive means. Thus, the efforts of reducing the rate of food insecurity are essential in this regards. This can also be achieved, among others, by active interactions between government farmers, to make contribution to important planning issues that relate with food production in the country.

With regard to institutional framework, Nigeria is seen to be rated as the least corrupt country in Africa and third in the world, which was one of the reasons for her high living standard that made it comparable to that of Mexico and Turkey. This means that efforts in reducing corruption in Nigeria cannot be overemphasized in the country's quest for food allocation. The strengthening as well as restructuring of anti-corruption agencies especially Economic and Financial Crimes Commission (EFCC) and Independent Corrupt Practices and Other Related Commission (ICPC) is highly recommended in this drive to build our institutions.

An important finding from the long-run relationship was that electricity supply is very vital and highly elastic in impacting food security in Nigeria. Thus, it is recommended that there is the urgent need of improving electricity supply in Nigeria, which can be realised by ensuring a more sincere

government commitment as well as private sector involvement. The issue of privatization that is currently contemplated may be needful; however, there should be a clear-cut standard on the extent of involvement, which will require a broad based consultation across the range of stakeholders.

Drawing an insight from Malthus population growth theory, Nigeria is known to be the most populated country in Africa with geometric population growth rate and arithmetic food production growth, as population increases without a commensurate increase in food production will lead to food insecurity. This is because more people tend to chase less food available. In view of this, Nigeria should increase food production to take care of the teeming population.

In summary, this study submits that there is need to improve institutional framework if Nigeria sincerely desires to experience rapid food security as institutions controls all other factors. This can be achieved through the instrumentality of the rule of law and effectiveness of the various agencies of the government to invest massively in agriculture either by subsidising farmers, providing seedlings at affordable rates, providing fertilizer to them, giving loans to the farmers without interest and educating them. Investment should be made on agriculture research to diverse means of modern farming process. This is necessary as strong institutional framework in the country will help in promoting business and economic activities that are relevant components of any meaningful economic transformation. Therefore, the study calls the attention of the managers of the Nigerian food Security Society (NFSS) and those that believe in the Nigerian project to realize that the issue of fiscal indiscipline that manifest in delayed passage of budget, rising budget deficit and excessive public borrowing, and so on, can mainly be addressed through strong institutional mechanism.

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