

Food Security in Nigeria: An Examination of Food Availability and Accessibility in Nigeria

Chimaobi Valentine Okolo, Chizoba Obidigbo

Abstract—As a basic physiology need, threat to sufficient food production is threat to human survival. Food security has been an issue that has gained global concern. This paper looks at the food security in Nigeria by assessing the availability of food and accessibility of the available food. The paper employed multiple linear regression technique and graphic trends of growth rates of relevant variables to show the situation of food security in Nigeria. Results of the tests revealed that population growth rate was higher than the growth rate of food availability in Nigeria for the earlier period of the study. Commercial bank credit to agricultural sector, foreign exchange utilization for food and the Agricultural Credit Guarantee Scheme Fund (ACGSF) contributed significantly to food availability in Nigeria. Food prices grew at a faster rate than the average income level, making it difficult to access sufficient food. It implies that prior to the year 2012; there was insufficient food to feed the Nigerian populace. However, continued credit to the food and agricultural sector will ensure sustained and sufficient production of food in Nigeria. Microfinance banks should make sufficient credit available to smallholder farmer. Government should further control and subsidize the rising price of food to make it more accessible by the people.

Keywords—Food security, food availability and food accessibility.

I. INTRODUCTION

AT the onset of the millennium, world leaders gathered under the backing of the United Nations to seek and provide guidelines for tackling economic challenges by 2015. The final outcomes of the series of meetings are summarized in what is known as Millennium Development Goals (MDGs), the first goal being “to eradicate extreme poverty and hunger”. This shows the heightened need for food security and justifies [1] who highlights that food (including water) is the most important component of life preceding shelter and clothing. Based on this importance, [2] defines food as “*Food is the fuel that energizes the body for effective routine performance and the lack of food makes an individual lethargic, indolent, cheeky and haughty. Unfortunately, the important and pivotal advantages of food to life and to a country’s economy have been terribly downplayed, especially in developing nations. These developing economies, including Nigeria, will be extremely affected if painstaking and pragmatic efforts aren’t immediately embarked upon. This would in no small measure hamper food security*”. Furthermore, [3] states that globally,

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around 870 million people are undernourished with more than 100 million children under the age of 5 still under-nourished and underweight and about 98 percent of these estimate reside in developing countries. Various issues affect the sustainability of developing countries and food insecurity is a prevalent issue. Literatures has shown that majority of the population in developing countries dwell in the rural area, are farmers who have small portions of land or are landless. There’s a high relationship between rural settlement and farming [4], [3]. This is evident in Nigeria. Nigeria is the largest oil producing country in Africa. She has around 79 million hectares of arable land (of which 32 million hectares are cultivated). Major agricultural produce are rain-fed and the outburst of population depend on staple foods such as rice, wheat and fish [5]. With a population of 160 million, more than 70% of the populations are under-nourished and suffering from poverty [5].

Agriculture was the hub of the economy. As of the 2012 official statistics, agriculture was 42 percent of total output (GDP), larger than oil share. However, when compared to export earnings it contributes less than 2% of its total share in comparison to oil sector and based on this the agricultural sector is lagging behind. More than 90 percent of the rural dwellers derive their livelihood from agriculture and less than 10 percent of the annual budget allocations are designated to agriculture. In retrospect, [6] highlights that underfunding of this sector leads to food insecurity and local supply crisis in Nigeria.

Reference [7] observes that in Nigeria’s capital, it is easier to purchase fruit flown more than 1,000miles from the Middle East than to buy what’s grown a few miles’ drive away. Yet 125 miles north, in Kaduna, Nigerian mangos rot on the farms”. Report by [8], tribune (2013) and [9], state that Nigeria spends N1.3trillion on the importation of four specific food items annually (rice, N1bn per day, N217bn on sugar, N97bn on fish and wheat, N635bn).

Food security has been a major issue globally as international organizations and governments have continuously developed and modified methods for reducing food insecurity. General consensus amongst authors, scholars, NGOs etc. is that developing nations (such as Nigeria), lack the ability to adequately feed its populace; hence the aim of this paper is to analyse the current level of food availability and accessibility in Nigeria. The focal question in the study is, given the increase in population; can the government adequately feed her citizens?

This paper is presented in five sections. Section II reviews the relevant literature, while methodology follows in Section

III. Discussion will be presented in Section IV and conclusion/recommendations are presented in Section V.

II. LITERATURE REVIEW

A. Concepts and Definitions of Food Security

In spite of the overwhelming issues prevalent in the world today, food security has remained a major point of discussion since the mid 70s after the first world food summit held in Rome. Various organizations and authors have tried to come up with a definition that encompasses all categories of food security issues.

According to [10], food insecurity is “*the limited or uncertain availability of nutritionally adequate and safe foods, or limited or uncertain ability to acquire acceptable foods in a socially acceptable way*”. Furthermore, the 1996 World Food Summit Plan of Action as reported in [11] notes four instances that render a nation food-insecure: 1) when the source of food is highly diminished and the likelihood of making up the difference is non-existent; 2) high occurrence of malnutrition not attributed to health or care factor for most part of the year; 3) when sources of food are unsustainable, and 4) when people endanger their lives in a bid to sustain their livelihood. In a descriptive work by Menghestab Haile reported in [12] and [13], the factors responsible for incessant increase in food insecurity has been identified as lack of adequate agricultural practices, poor infrastructure, high-transport cost, low agricultural productivity, extreme weather condition, political conflicts and lack of appropriate marketing strategies. However, [14] suggests that despite these factors causing volatile food insecurity, poverty is the biggest factor affecting it. Authors have varying views regarding the effect of poverty on food insecurity. Authors such as [15]-[17] were of the strong opinion that poverty plays a very significant role in causing food insecurity. They conclude that poor households lack access to the market to display their goods for sale and lack the ability to improve their diet [18], [19]. References [20], [21] opined that though there is a close relationship between food insecurity and poverty, income and measures of poverty are not clear tools for monitoring food security as they are not sufficient enough to prove food insecurity. Thus they concluded that the relationship between poverty and food insecurity is inconsistent.

References [22]-[24] ascertain that there are three dimensions of food security; food availability, accessibility and utilization. Reference [42] added another dimension: stability of supply over time. These criteria provide a general baseline for nations, therefore countries that do not meet up with them are said to be food insecure. Reference [20] suggests that food security should be a measure of household condition and not necessarily of individuals in the household. This is particularly of importance in households where young children reside. More often they are usually protected from forms of food insecurity. Reference [23] further discusses that food security at the household condition means accessibility to food over a period of time. This entails two factors, adequate

availability of food and sufficient income to purchase the available food.

As a result of the continuous food crisis, [17] and World Food Summit (WFS) have put in place several action plans for reduction of food insecurity. According to [17], the pace at which reduction of food insecurity is going is slow and the vision of the MDGs looks impaired, therefore the need for international organizations and governments to continue to bring the issue of food security to the forefront of global issues [25], [26].

B. Food Security in Nigeria

People are dying and the hunger is simply unbearable. We need to tell ourselves the truth; there is hunger in the Land. Our people go to bed with empty stomachs- Haruna, a member of the House of Representatives [11]. References [15], [11] in their various works have also provided literature to support Haruna. According to an article by [27] Dr Akinwunmi Adesina, Nigerian Minister of Agriculture said that “*Nigeria still has 13 million people suffering from hunger and malnutrition is still high*”. Agreeing with him, Oxfarm, a non-governmental organization, has notified the government of an imminent food crisis if food production is not improved [2].

In the 1960s, agriculture played a leading role in the Nigerian economy, creating employment, income, foreign exchange, food production etc. Prior to the discovery of oil, the issue of food insecurity was non-existent, Nigeria was able to feed its population and export the surplus. Various regions of Nigeria specialized in production of either food or cash crops. There was the groundnut pyramid in the North, the cocoa mountains in the west, oil palm and kernel heaps in the East and the rubber plantation in the mid-west. Yam, cassava, maize, millet, sorghum and soya beans were produced in abundance. The discovery of oil changed the system [41]. Funds were channelled away from the sector, agricultural produce was substituted with oil, interest in agriculture reduced and in the words of [12] and [13] “*it was like declaring holidays for hoes and machetes*”

Factors that keep pushing Nigeria into food insecurity are; inadequate investment in agriculture, inadequate financial support for small-holder farmers, ineffective agricultural policies; low fertilizer use, high farm cost in agrochemicals, poor storage facilities, poor market access and marketing inefficiency [28]. Recent report by [29] also highlighted that the Boko Haram crisis in the Northern part of the country has intensified food insecurity in the North.

Reference [5] also listed population growth and adverse climate as factors affecting food insecurity in Nigeria. He went further to state that increase in population will have a direct effect on food. He estimated that with the current food production growth rates Nigeria cannot adequately feed her population. In the area of climate, [29] also noted that the recent floods experienced in Nigeria increased the number of households falling into food insecurity. Reference [2] added that a lot of young people migrate to the cities in thousands in search of few white collar jobs, yet lands lay fallow and neglected. These migrants are young adults who after

completing secondary school move over to the cities as opposed to picking up agriculture which is the environment they were raised in. If adequate attention is placed on these young rural adults they have the knowledge that is needed to improve agriculture.

Rice is one of the food commodities that have effectively kept Nigeria out of major food crises. It is therefore enlightening to know that 2.5 million metric tons of rice are needed to meet the demand for rice in Nigeria annually but only half a million metric tons per year are produced locally, filling the gap with importations from China, Thailand (Tell, 2008 reported in [12] and [13]) and making Nigeria the second-largest importer of rice in the world [7]. Reference [9] Timothy Prewitt, the head of United States Agency for International Development market in Nigeria, further highlighted that as a result of high level of importation of rice, Nigeria lost around 1.37 million jobs from countries supplying the imports.

The price of rice has increased by more than 100% and spending has reached N1bn per day on rice. Currently the Federal government is creating avenues to curb the spending through various agricultural policies [12], [13].

C. Nigerian Agricultural Policies Review

Over the years the Nigerian government has made fiscal plans to improve the agricultural sector. These include tax reduction, subsidization, bank lending at reduced or zero interest rates etc. However over time these policies have failed in one way or the other due to their inaptness. This can be related to the point made by [30] that the Nigerian government is more interested in size of land planted rather than sustainable growth of output.

During the colonial era policies such as forest policy (1937 & 1945), Agricultural policy (1946), Policy for the marketing of oil, oil seeds and cotton (1948), Forest policy for Western Region (1952), Western Nigerian Policy of Agricultural and Natural Resources (1959) were in existence. Reference [30] analyzed these policies and highlighted that they were based on forestry as opposed to agricultural production. Hence, food and cash crop production did not grow. An assessment by [31] described the scheme as a disaster. In post-colonial times, Nigeria adopted policies such as Operation Feed the Nation (1976), Green Revolution (1979), and Agricultural Development Programmes (ADP), which were sponsored by the World Bank. Reference [15] suggested that one of the major causes of food insecurity is the withdrawal of funds by the World Bank for the ADPs. Furthermore, other policies include River Basin (1976), and Agricultural Credit Guarantee Scheme (1977). During the 1980s Nigeria experienced a heightened increase in debts adding to high inflation rates, poverty etc. and in a bid to re-solve it adopted SAP (1980), Green revolution (1980), Directorate for Food, Roads and Rural Infrastructure (1986), Better Life Programme for rural women (BLP) (1987).

1. National Special Programme on Food Security (NSPFS)

The programme was launched in 2002 by the Olusegun Obasanjo administration in all the 36 states of Nigeria. The main aim was to reduce rural poverty and increase food production. Information was disseminated to farmers on low cost approach and sustainable methods to improving food production and increasing income level. Assistance was sought from the Food and Agriculture Organization [32], [12], [13]. However, this policy suffered setbacks in terms of lack of timely repayment of loans, difficulty in incorporating new technology into pre-existing ones, lack of modern storage facilities and low labour on the farm land [30].

2. Root and Tuber Expansion Programme (RTEP):

RTEP is a programme supported by the [33]. The program aided farmers with essential information with adequate processing methods for cassava and other root and tubers (such as yam and potatoes) [12], [13]. It covered 26 states and targeted smallholder farmers who have less than 2 hectares of land per household, and women who are directly involved in food production, processing and marketing [30]. According to the former minister of agriculture Professor Sheikh Ahmad Abdullah, RTEP has led to the development of improved and increased varieties of root and tuber crops such as potatoes, yams, cassava etc. Yam production increased from 26.451 to 37.822 metric tons and cassava from 36.795 to 52.006 metric tons between 2000 and 2010 [34].

3. Fadama Development Projects

The term "Fadama" is of Hausa origin, which means irrigable land [35]. According to the Ministry, the objective of this project is to "increase the incomes of users of rural land water resources on a sustainable basis". The program started in 2008 and has successfully completed two phases [36]. Furthermore, it is expected that 2 million households will benefit from this project [35].

4. Community-Based Agricultural and Rural Development Schemes

As a result of the increase in poverty and lack of direct community based agriculture, the government introduced the community-based agricultural development schemes between 2003 and 2010 [37]. In other to capture the essence of poverty it was designed for eight Northern states with highest poverty prevalence rates; Jigawa, Kano, Kastina, Kebbi, Sokoto, Zamfara in the North West, and, Borono and Yobe in North-East, with Kano declining the loan but adopting the approach [33]. The main objectives of this scheme are to enhance the living conditions in rural communities with particular focus on women and other vulnerable groups as well as to increase food security [37]. The scheme is sometimes referred to as farm settlements and at other times back-to-land programmes [12], [13].

5. Nigerian Agricultural Transformation Agenda (ATA)

ATA is the most current agricultural policy in Nigeria. The objective of this agenda is to increase income and livelihood of smallholder farmers and entrepreneurs residing in the rural

area who are involved in the production, processing, storage and marketing of crops in the Staple Crop Processing Zones (SCPZs) (ADB, 2014). There are four major points underlining this agenda, geared to increase the domestic food supply by 20 million metric tons by 2015. The ministry asserts that 45 percent of its target by 2015 has already been achieved as of 2011, and around 2.7 million jobs out of targeted 3.5 million jobs have been created, with 2 million of them created in rural areas. As of 2012, 1.76 million metric tons of rice has been produced out of the targeted 2.1 million metric tons. Reference [7] highlights that there's currently a \$40 million dollar project to end rice importation by 2015, create 500,000 new jobs and turn Nigeria into a rice exporting country. The agenda is poised to strengthen 10 priority value chains across the country which is spread across the six geo-political zones: North-West (onions, tomato, sorghum, and cotton), North-Central (maize and soya beans), South-West (oil palm and cocoa), South-South (oil palm and cocoa), South-East (oil palm and cocoa), North East (Cotton, onions, tomato, sorghum). At the national level, rice, cassava and livestock are priorities [38].

The targets of this agenda are 45,300 economically active smallholder farmers who reside in the rural areas and are involved in commercial agriculture. Women and children are also targets of the agenda [39]. In a presentation of the mid-term achievements, the minister noted that various institutions are backing this project financially such as ADB-\$500million, World Bank- \$500million, IFAD-\$80million, UNDP-\$1.5million, DFID -£37million and USAID-\$100million among others [40]. In other to enhance the effectiveness of the programme, the Growth Enhancement Support (GES) was created in 2012. This involved the shifting the role of seed and fertilizer distribution from the government to the private sectors (seed and fertilizer companies). This scheme became necessary as a result of the level of corruption involved. The GES saved the government N25billion in 2012 [38]. Following the GES, mobile commerce (e-wallet system) was also introduced. Farmers could purchase fertilizers and seeds directly from their mobile phones. It's estimated that N15 billion and N1.5 billion worth of fertilizers and seeds respectively were sold to farmers via e-wallet in 2012. This automatically curbs corruption, aids smallholder farmers in learning ICT and improves the agricultural sector. It is also believed that Nigeria is the first African country to adopt such level of input for farmers [38]. Reference [7] state that locals are skeptical that these policies will not have the power to change the crisis; it can be seen as cure after death. Therefore, this paper seeks to ascertain Nigeria's ability to feed her populace.

III. METHODOLOGY

The study employed ordinary least square regression method and graphic trend for analysis.

Food availability was measured by local production [Crop production, livestock and fishing share of gross domestic product ($GDP_{CPL\&F}$)] and value of import of food and life animals ($M_{F\&LA}$). Food accessibility was measured by Per

Capita GDP (GDP_{PC}), annual average Consumer Price Index (CPI) for food and Agriculture, and foreign exchange utilization of agriculture and food (AF_{FEXU}).

While food availability employed multiple linear regression analysis and graphic trend to show the extent to which it has been affected by food and agricultural policies in Nigeria, food accessibility utilized the graphic trend analysis of growth rate of variables to show the extent to which the Nigerian populace can access the available food, given the general income level, inflation, and food foreign exchange utilization. This was specified to help examine the influence of credit to agriculture sector and exchange rate has on food availability and the influence of consumer price index for food and per capita GDP has on food accessibility in Nigeria.

Data was sourced from Central Bank of Nigeria (CBN) Statistical Bulletin and Trading Economics. Specifically, Population statistics of Nigeria and Per Capita GDP was sourced from Trading Economics while the rest were sourced from the Central Bank of Nigeria (CBN).

We hypothesize that;

- Food and Agricultural policies have not impacted significantly on food availability in Nigeria.
- Nigerians have not sufficiently accessed available food

The first hypothesis can be estimated using the following models:

- $FA = f(CBL_A, CMFBL_{AFMP}, ACGSFL, GREA, FFEXu)$

Therefore;

$$FA = B_0 + B_1CBL_A + B_2CMFBL_{AFMP} + B_3ACGSFL + B_4GREA + B_5FFEXu + \mu \dots \dots \quad (1)$$

where, FA = Food Availability ($GDP_{CPLF} + M_{F\&LA}$); GDP_{CPLF} = Crop production, livestock and fishing share of gross domestic product; $M_{F\&LA}$ = Import of food and life animals. CBL_A = Commercial Bank Loan to Agriculture and Fishery. $CMFBL_{AFMP}$ = Community/Microfinance Bank Loan to Agriculture, Fishery, Manufacturing and food Processing; $GREA$ = Government Recurrent Expenditure on Agriculture; $ACGSFL$ = Agricultural Credit Guarantee Scheme Fund Loan; $FFEXu$ = Food Foreign Exchange Utilization; μ = error term; $B_0, B_1, B_2 \dots$ = denote unknown parameters to be estimated.

Hypothesis II can be measured via a comparative analyses of the growth rate of the of crop production, livestock and fishing share of the gross domestic product plus the growth rate of import of food and life animals, and growth rate of per capita GDP and food foreign exchange utilization. Furthermore, an analysis of the population share of the available food taking into account the per capita income and consumer price index will expose the population's ability or otherwise, to access the available food. This will be done as;

$$\text{Growth rate} = \frac{X_2 - X_1}{X_1} \quad (2)$$

where, X represents the variable and 1, 2, are time series of variables.

The graphic analysis of growth rate of indicators was adopted to show the extent to which the available food can be accessed (purchased) in Nigeria.

IV. DISCUSSION

A. Unit Root Test

The Phillips-Perron test for stationarity conducted at level and 1st difference showed that observed t-statistics were greater than the critical values. Therefore, we conclude that there is no unit root problem with the data.

B. Food Availability in Nigeria

The test carried out at 5% level of significance showed that Agricultural credit guarantee scheme fund loan, commercial bank loan to agriculture, and food foreign exchange utilization impact significantly on the availability of food in Nigeria. Government recurrent expenditure on agriculture and Community/Microfinance Bank Loan to Agriculture, Fishery, Manufacturing and food Processing had an insignificant effect on food availability in Nigeria. While the coefficients of ACGSFL, CBLA and GREA contributed positively to food availability in Nigeria, CMFB_{AFMP} and FFEX_u contributed negatively.

TABLE I
REGRESSION RESULT

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|----------------------|-------------|-----------------------|-------------|----------|
| C | 691601.1 | 684715.5 | 1.010056 | 0.3285 |
| GREA | 34.06587 | 27.30921 | 1.247414 | 0.2314 |
| ACGSFL | 753.2016 | 330.4687 | 2.279192 | 0.0377 |
| CBLA | 33.87871 | 10.03968 | 3.374480 | 0.0042 |
| CMFB _{AFMP} | -217.6914 | 255.3508 | -0.852519 | 0.4073 |
| FFEX _u | -7.881960 | 3.307087 | -2.383354 | 0.0308 |
| R-squared | 0.867728 | Mean dependent var | | 4215392. |
| Adjusted R-squared | 0.823637 | S.D. dependent var | | 4299817. |
| S.E. of regression | 1805735. | Akaike info criterion | | 31.88579 |
| Sum squared resid | 4.89E+13 | Schwarz criterion | | 32.18423 |
| Log likelihood | -328.8008 | F-statistic | | 19.68046 |
| Durbin-Watson stat | 2.537196 | Prob(F-statistic) | | 0.000004 |

The result showed that the coefficient of agricultural credit guarantee scheme fund loan contributed made the highest positive contribution to the availability of food in Nigeria, while Community/Microfinance Bank Loan to Agriculture, Fishery, Manufacturing and food Processing impacted on food availability negatively more than other variables. The coefficient of Community/Microfinance Bank Loan to Agriculture, Fishery, Manufacturing and food Processing failed the a priori expectation, giving that funding agriculture, fishery, manufacturing and food processing should boost agriculture and food availability positively.

The adjusted R² of 82% shows that variations in food availability in Nigeria can be attributed to variations in the independent variables. A correlation matrix test revealed that commercial bank loan to agriculture and the agricultural credit guarantee scheme fund loan had the stronger and positive relationship with food availability in Nigeria (88% and 79.78% respectively). Government recurrent expenditure and agricultural (57%) and community/micro finance bank loan to Agriculture, Fishery, Manufacturing and food Processing (56%) were positive and slightly strong in their relationship with food availability in Nigeria. Food foreign exchange utilization had a weak and positive relationship with food availability in Nigeria. When regressed against the food availability in Nigeria, it passed the a priori expectation. However, given the correlation matrix test, result showed that it failed the a priori test. Considering the effect of the policies on the available food for the population (population share of the available food), it was discovered that only commercial

bank loan to agriculture had significant impact. However, the adjusted R² which stood at 77.6% implied that variations in the population share of the available food can be attributed to variations in the independent variables. Though not statistically significant, agricultural credit guarantee scheme fund loan made the highest positive contribution to population share of the available food in the country and community/micro finance bank loan to Agriculture, Fishery, Manufacturing and food Processing impacted on food availability negatively.

1. Trend Analysis of Population Growth Rate and the Rate of Food Availability in Nigeria

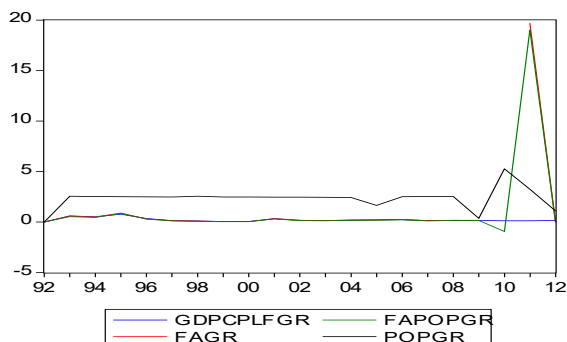


Fig. 1 Graphic analysis of Population growth rate, growth rate of local production of food, growth rate of available food and growth rate of the population share of the available food in Nigeria (1992-2012)

Growth rate of domestic production of food remained almost at zero level throughout the period of study. Population growth rate rose above growth rate of food availability, domestic food production and the growth rate of population share of available food from 1992 to 2009. While domestic production of food flattened through the period, food availability and the population share of the available food grew at a rate higher than population growth rate during the period from 2010 to 2011. Notably, in 2010, while food availability growth rate and the growth rate of the population share of the available food rose steeply, population growth rate declined from 2010 to 2012. Food availability growth rate and growth rate of the population share of the available food remained the same for the period of study. A decline in population growth and an increase in food availability between 2010 and 2011, resulting possibly from effective agricultural and food policies, and population control policies (birth control policy, immigration policy, monetary and fiscal contraction, etc.) represent a time/year of food security. Given the declining population growth and increase in available food in Nigeria, consumption and demand will decline, forcing prices of food down and more accessible to the population.

2. Credit to Agricultural Sector in Nigeria

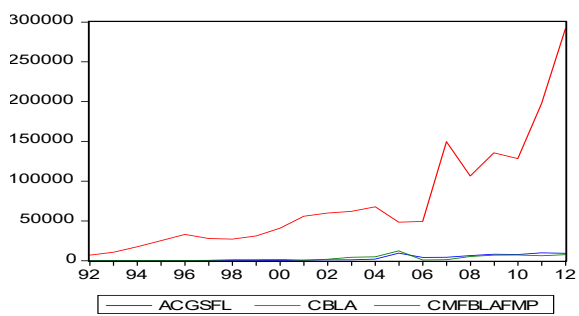


Fig. 2 Graphic trend of credit to agricultural sector in Nigeria

A close look at the graphic trend of credit to agriculture sector in Nigeria as evidenced in Fig. 2 shows that commercial bank had granted the most credit to the sector than any other credit institution in Nigeria and therefore has made the most contribution (59%) to agriculture share of the gross domestic production. The commercial bank credit trend showed an upward move especially in 2011 and 2012. It only experienced a slight down turn in 2005, 2009 and 2010. The same cannot be said for the agricultural credit guarantee scheme fund and the community/microfinance bank credit to agriculture, fishery, manufacturing and processing of food, which has move in the same trend pattern. Though the agricultural credit guarantee scheme fund made a significant 22.52% contribution to domestic production of agricultural output, community/microfinance bank credit to the sector has been insignificant (9%).

3. Community/Microfinance Bank Credit Analysis (Agriculture, Food Manufacture and Processing vs. Trade and Commerce)

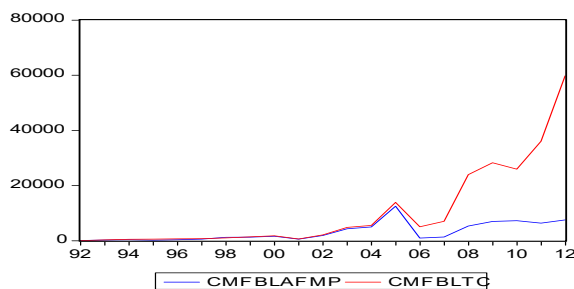


Fig. 3 Graphic trend of Microfinance sectoral credit (agriculture and trade and commerce sectors) in Nigeria

Food is the most basic physiology need and therefore should be considered fundamental by any credit institution. While the mega commercial banks give credit to big farmers, smallholder farmers should be able to access sufficient credit from the microfinance banks. The sectorial trend of microfinance credit in Fig. 3 shows that trade and commerce sector has accessed more credit than any other sector, including the agriculture sector. Small holder farmers should be encouraged by granting them credit, seeing that credit has been very effective in increasing local production of food. Big farmers tend to concentrate on cash crops and export of these crops increase their profit. However, smallholder farmers depend on the local market to sell their farm produce and make profit and thereby making food available and accessible to the populace. Furthermore, increasing microfinance bank credit to small holder farmers will encourage more smallholder farmers to increase production and domestic supply of food. The effect of increased production of food will force price down and make it more affordable (accessible) to the public. Community bank credit to agriculture sector dropped drastically in 2006 due to recapitalization of community banks and their reformation to microfinance bank. However, credit from microfinance bank took an upward turn again but has not reached its peak as was in the year 2005.

C. Food Accessibility in Nigeria

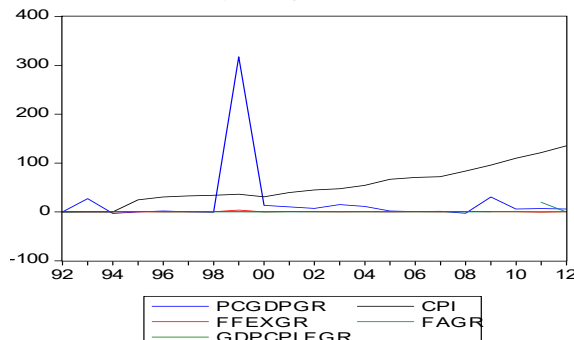


Fig. 4 Graphic trend of Per Capita GDP growth rate, Consumer Price Index for food, growth rate of domestic food production and Food Foreign Exchange utilization growth rate

Consumer price index for food has continued on an upward trend after 1994 and has remained above the per capita GDP growth rate and growth rate of domestic production of food. This consumer price index represents the rate of core inflation on food prices. While the rate of local production of food remain slightly higher than rate of population growth, signifying the availability of food, prices of these foods has continued to be on the rise..

A further analysis on the accessibility of food in Nigeria showed that per capita GDP (general income level) grew at a rate slightly higher than food availability. This does not entirely mean that Nigerians generally have good access (can sufficiently purchase) the available food in the county. Food availability represents the cost of domestic food production plus the cost of import. Taking into consideration the consumer price index for food, the foreign exchange utilization for food (and possibly exchange rate), causes the price of the available food to be unbearable high for the for the populace to access. Therefore, the general income level of Nigerians is well below what they need to sufficiently access the available food in Nigeria due to the rising price level of food. For example, in 2011, the year that saw rising food availability and declining population growth rate; a person has -N-165,742.92 share of the gross domestic product to access -N-87,223.60 share of the available food in Nigeria, given the consumer price index of 121.3. This implies that currently, given the income distribution, the average Nigerian does not fully utilize the available food (poor accessibility) due to rising prices. It also shows that given the growth rate of the general income level as compared to the rate at which prices of food rise, in the future, Nigerians will not be able to access (purchase) available food. This would imply that demand for food will reduce due to rising prices, smallholder farmers will reduce production because of declining demand for food and big farmers will either reduce production or turn to the international market for exports. In general, if prices of food are not controlled or subsidised, and more credit access granted to smallholder farmers, food security is not ensured in Nigeria and there will be increased cases of hunger in the future.

D. Test of Hypothesis

H_{01} : Food and Agricultural policies have not impacted significantly on food availability in Nigeria.

The t-test showed that commercial bank lending to agriculture, agricultural credit guarantee scheme fund loan and foreign exchange utilization for food had significant effect on food availability in Nigeria. Furthermore, the trend analysis showed that rate of domestic production of food remained higher than the rate of population growth. Therefore, the paper rejects the null hypothesis and concludes that food and agricultural policies impacted significantly on food availability in Nigeria.

H_{02} : Nigerians have not sufficiently accessed available food.

The analysis of growth rate of relevant variables along with the analytical comparison of population share of available

food, consumer price index and per capita GDP showed that price of the available food in Nigeria is by a large extent higher than what the average Nigerian could afford, even in the year that showed rising food availability and declining population growth. This implies that given the rising prices of food and the general income level, Nigerians have not sufficiently accessed the available food. Therefore, the paper accepts the second null hypothesis.

V. CONCLUSION AND RECOMMENDATIONS

Undeniably, one of the major challenges Nigeria has to overcome is the issue of food security. A country which was one of the biggest exporters of agricultural produce now fights with domestic supply and high importation of food. Population growth rate was higher than food availability for the first 19 years of the study. While growth rate of food availability rose higher than population growth rate in 2011 and 2012, rising food prices and low income level has made it generally difficult to sufficiently access the available food in the country. Adding to it is the poor credit from microfinance banks to smallholder farmers who mainly supplies the local market as opposed to big farmers that seek higher profit at the international market. The paper discussed food security in Nigeria, focusing on food availability and accessibility. It revealed that credits from the commercial banks and the Agricultural Credit Guarantee Scheme Fund (ACGSF) have significant and positive contribution to sustained local production of food. Foreign exchange utilization for food had significant and negative contribution to food availability in Nigeria. However, Microfinance banks have granted more credit to the trade and commerce sector over agriculture sector in the economy. Microfinance banks target small and medium enterprises, which includes smallholder farmers. Increased funding of these smallholder farmers will increase food supply to the domestic market, making more food available and accessible to the average Nigerian. Furthermore, the rate of import of food has declined in latter times as opposed to the earlier times.

While food seems available in Nigeria, growth in general income level remains lower than the price level of food products. This implies that presently and in the near future, the average Nigerian will not be able to purchase sufficient food given the increase in food prices above the general income level. Therefore, in agreement with [2], and justified by the statement of [12], [13], that "A country that cannot formulate and effectively implement agriculture and food policies may find it difficult to use the citizens as catalyst for sustainable democracy".

The paper recommends that policies geared towards increasing microfinance bank credit to smallholder farmers should be implemented to increase domestic production and supply to of food products. Furthermore, food prices should be controlled or subsidised to increase the social safety net of poor Nigerians and increase their ability to purchase sufficient food for better livelihood. Lastly, Hence funding contributes to domestic production of food, continued credit access should be given to big and smallholder farmers to ensure sustained

production of food in Nigeria.

VI. SUGGESTION FOR FURTHER STUDIES

Given that food prices grow faster than the average income level of Nigerians and therefore make it increasingly difficult to access food, one wonders what market domestic food products are supplied by farmers. Therefore, the paper recommends that there should be further study on the supply of food crop, livestock, fishing, cash crops and the level of import of these products into the country, considering also the target market (international and domestic) for each product.

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