



ANCHOR BORROWERS PROGRAMME AND FOOD SECURITY IN NIGERIA: AN ASSESSMENT

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ABSTRACT

This Study assesses the Implementation of Anchor Borrowers Program and Food Security in Nigeria. The Anchor Borrowers Program was introduced in 2015 to boost agricultural output, provide food security and reduce importation of Agricultural commodities particularly those Nigeria has a comparative advantage to produce. The objectives of the study are to measure the trend of food crops production and price of food items

Introduction

Agriculture is a sector that contribute to numerous economies., the improvement of an enduring economy is connected to the development of agriculture. Agriculture is considered as an impetus for the general development of any country. It is in this way a basic segment that drives the economic development and industrialization of developing countries, and furthermore holds the contribute for reducing unemployment. Therefore, its development is fundamentally significant for guaranteeing food and nutritional security, income and employment opportunities and for enhancing industrialization and generally speaking economic development of the nation with the support of Policies and Programmes (Praburaj 2018).

Agricultural policies and Programmes play a vital role in the process of economic growth. Among them, technological change has been acknowledged as the principal driver of productivity growth (OECD 2012; Morris et al. 2007). The differences in aggregate agricultural productivity across countries are mainly attributed by modern technical inputs, human capital, agricultural research and infrastructure (Hayami and Ruttan 1985; Mundlak and Hellinghausen 1982; Lau and Yotopolous 1989). Change in agricultural productivity is the fundamental policy to initiate agricultural transformation and



before and during the intervention of Anchor Borrowers Program using descriptive statistics such as tables and graphs to present findings. Similarly, trend analysis was used to show the positions of production level of rice, maize, and cassava and the price of food items annually as recorded. The result of the findings shows that: Maize production increased by 21.9% million tones; rice production increased by 29.6% million tones, cassava production increased by 17.6% million tones and the price of food items increased by 40.3% between the period of intervention, 2015 and 2020. Based on the above results, it means the implementation of Anchor Borrowers Program is impacting slowly on food security. Therefore, the researchers recommend that: Emphases of Anchor borrowers' program should be geared towards boosting irrigation system and ensure the right type of fertilizers are available at the right price, at the right times so as to boost production of maize and rice; Trade Policy should be considered seriously to restrict agricultural export, particularly, maize and rice and allow legal importation of those food we couldn't produce to avoid food crises and price increase; CBN should stabilise exchange rate through policy and intervention in the foreign Exchange market with proper management of foreign reserves.

Keywords: Anchor Borrowers Program, Food Security, Food Production and Price of Food Items

raise the income of the rural people (Ngai and Pissarides 2007; Urgessa 2015). The agricultural productivity improvement increases farmers' income and secures food supply at reasonable prices (Otchia 2014). The degree of the effects of agricultural productivity growth on rural people welfare improvement differs largely across countries, depending on the way they developed and used new technologies (de Janvry and Sadoulet 2010). Large parts of the developing world like China, India, Brazil, etc have witnessed unprecedented growth in food production, and job creation in recent decades due to policies and programmes like credit and price support policies, green Revolution Technologies and the massive adoption of high-yielding varieties in staple foods which has led to decline in hunger and malnutrition (Arie, Ruerd & Johaness 2001). The Government of Ethiopia, South Africa, Egypt etc also followed the pattern of developing countries in terms of various agricultural policies and programmes such as market liberalization, structural adjustment, Agricultural-Led Industrialization, Sustainable Development and Poverty Reduction Program, Participatory and Accelerated Sustainable Development to Eradicate Poverty and successive Growth and Transformation Plans I and II and many others to raise productivity in agriculture between 1991 and 2016. Since 1991,



the government of Ethiopia abolished all subsidies and price support measures to agriculture. A structural adjustment program reduces the role of the government and increases the role of demand and supply forces in the allocation of resources in the Ethiopian economy. All these policy interventions have been implemented to improve agricultural productivity and production which, in turn, reduce poverty and food insecurity (Mundlak 1988).

Nigeria Government was not left out, many Agricultural Policies and Programmes are being implemented. However, the Anchor Borrowers Programme (ABP) is a recent Programme borne out of the consultations with relevant stakeholders as; Federal Ministry of Agriculture & Rural Development (FMARD), State Governors, agro-millers, and smallholder farmers. The consultations were based on the need to boost agricultural production and non-oil exports in the face of dwindling crude oil prices and the negative effect on the revenue profile of Nigeria. According to Emefiele (2016), Nigeria's food import bills were exceptionally high; rice and wheat formed part of the items that consumed a whopping ₦1.0 trillion in foreign exchange. Emefiele (2016) further stated that food importation fueled domestic inflation, depleted our foreign reserves, displaced local production and created unemployment and concluded that import dependency especially on commodities of comparative advantage was neither acceptable nor sustainable.

In line with its developmental function, the Central Bank of Nigeria (CBN) established the ABP and is designed to create a linkage between anchor companies involved in the processing of agricultural commodities and the small holder farmers of the relevant key agricultural commodities. The ABP is aimed at the provision of farm inputs in kind and in cash to small holder farmers for the purpose of boosting production of the relevant commodities, stabilize supply of agricultural produce as inputs to agro processors and, as a result, address the country's negative balance of payments on food. The arrangement is such that at harvest, the small holder farmers supply their produce to the Agro-processor- the Anchor -who pays the cash equivalent to the farmer's account (CBN, 2016).

Statement of the Problem

Despite the efforts of Nigeria government on agricultural sector, the sector has failed to keep pace with the needs of a rapidly growing population, resulting in a progressive rise in import bills for food and industrial raw materials. For instance, import of food and live animals grew from ₦1.8 billion constituting 14.1 per cent of total imports in 1981, to ₦2,885.4 in 2011, and its proportion of total imports also increased to 20.2 per cent (CBN, 2015). Similarly, import of animal and vegetable oil and fat, a major raw material in the food industry, grew from ₦0.1 billion in 1981 to ₦144.7 billion in 2015, constituting 0.8 and 1.3 per cent of total imports in the respective periods. The potentials of the agri-business



sector as a major employer of the growing labour force and earner of foreign exchange have also been undermined. As a result, a large majority of the population, many of whom live in the rural areas remain poor; while Nigeria is far from being food secure. Consequently, Nigeria has remained a net importer of agricultural products over the years. These include; wheat, milled rice, raw cane sugar, whole milk powder as well as fish and fish products, most of which can be produced in the country. Food and Agricultural Organization of the United Nations (FAO) estimated Nigeria's cereal import (mostly rice and wheat) for 2015 at over 7.5 million tonnes and, Nigeria is said to be the largest rice importer in Africa. Various financing policy initiatives have been instituted to improve the performance of small-scale farmers in Nigeria and transform the agricultural sector (Evbumwan, 2004). However, the desired goals have not been achieved because of some of the peculiarities of the smallholder farmers. Prominent among these are their poor access to finance and lucrative markets to dispose of their produce, which have left them in a vicious cycle of poverty (Evbumwan, 2016). Additionally, Nigeria's cumulative agricultural imports between 2016 and 2019 stood at N3.35 trillion, four times higher than the agricultural export of N803 billion within the same period Taiwo Oyaniran (2020).

Research Questions

- a. What is the level of the effect of Anchor Borrowers loan to farmers on food production?
- b. Has Anchor Borrowers loan to farmers enhance price of food items?

Objective of the Study

The main aim of this study is to assess and evaluate the impact of the Anchor Borrowers loan on targeted Agricultural products, the specific objectives are:

To assess if Anchor Borrowers Programme enhance food Production in Nigeria

To examine if Anchor Borrowers Programme enhance price of food items in Nigeria.

Literature Review

Conceptual Framework

Agricultural sector

Agricultural sector could have placed Nigeria in the world economy based on its wealth of human and natural recourses. However, these resources are grossly untapped over the years. The country has been relying on revenue generated from crude oil and gas from late 1960s after it had shifted from agricultural sector which has been the mainstay of the economy. However, since mid-2014, oil revenue declined alongside government's inability to diversify its sources of revenue and foreign exchange in the economy slowed the pace of economic growth. This actually led to recession in the second quarter of 2016. The



government recognizes that the economy is likely to remain in a path of steady and steep decline if nothing is done to change the course.

Agriculture contributed to GDP growth in Nigeria in a consistent manner. The sector grew by 4.88% in third quarter of 2016, and recorded 13% in the previous years, suggesting immense unrealized potentials (MB&NP, 2017). Increased investment in agriculture can really guarantee food security, have the potential to be a major contributor to job creation, and be able to arrest the problem of food insufficiency, and to a very large extent help improve the foreign exchange value by way of increasing the amount of export from the sector.

The contribution of agriculture to economic growth and development lies in providing food to expanding population, increasing the demand for industrial products, providing local foreign exchange earnings for the import of capital goods, increasing social income, providing productive employment and improving welfare of the rural people. When input expands with increase productivity it increases the income of the farmers. Rise in per capita income leads to substantial rise in the demand for food and industrial goods. As output and productivity of exportable goods expand the export of the country increases and result in larger foreign exchange earnings. Thus, agriculture surplus leads to capital formation when capital goods are imported with this foreign exchange (MB&NP, 2017).

Anchor Borrowers Programme

The Central Bank of Nigeria (CBN) in line with its developmental function established the Anchor Borrowers' Programme (ABP) to create a linkage between anchor companies that are good in the processing and smallholder farmers (SHFs) of the required key agricultural commodities especially rice, wheat, sugar and many more. ABP is funded with the N220 billion Micro, Small and Medium Enterprises Development Fund (MSMEDF) of CBN through the deposit money banks (DMBs) at a cost of 2% and maximum interest rate of 9% to SHFs and tenor equivalent to be the gestation period of the identified commodities (CBN, 2016). The implementation of ABP is basically supervised by the development finance office (DFO) in the Development Finance Department (DFD) of CBN in the various States across Nigeria. The main thrust of ABP is to provide conditions that make it attractive for DMBs to lend to SHFs. This involves ensuring: (1) cheaper credit; (2) timely and reliable supplies of farm inputs; (3) improved the capacity of SHFs through training on modern farming methods and practices; (4) guaranteed market for farm produce; and (5) provision of partial-collateral. The ABP model helps to structure the agricultural value chain to minimize the credit risk DMBs face when lending to SHFs. ABP is targeted at boosting production of key agro-enterprise (wheat, sugar, rice, maize, fish, cotton, etc.), stabilize inputs supplies to SHFs and agro-processors (Anchors) and address the country's



negative balance of payments on food. At harvest, the SHF supplies his/her produce to the agro-processor (Anchor) who pays the cash equivalent to the farmer's account. The broad objective of the ABP is to create an economic linkage between smallholder farmers and reputable large-scale processors with a view to increasing agricultural output and significantly improving capacity utilization of processors. Other objectives include: Increase banks' financing to the agricultural sector. Reduce agricultural commodity importation and conserve external reserves. Increase capacity utilization of agricultural firms creates a new generation of farmers/entrepreneurs and employment, deepen the cashless policy and financial inclusion. Reduce the level of poverty among smallholder farmers assist rural smallholder farmers to grow from subsistence to commercial production levels. Since inception of ABP in 2015, loan of 497.2 billion has been released to 2,504,690 beneficiaries while payback was 118.7 billion (CBN, 2021)

Food Security

The 1996 World Food Summit defined food security as "a situation that exists when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious foods that meets their dietary needs and food preferences for a healthy life." Barrett (2010) says that food security has to do with availability of food, access to food, and for the food to be culturally appropriate. There are many factors in today's global environment that exacerbate food security. It is true, we live in an age where we are growing and producing more food than ever before. We have enough food to feed the world's population, but it is not distributed properly nor is all food culturally appropriate across the globe. Local food access differs dramatically and the greatest difference exists between developed and developing countries. The main reason for this inequity is an income-related difference between these populations (Hazell and Wood, 2008). It must be stated though, that in every country of the world there is hunger, and this often falls along economic and social lines. The underprivileged – be it individuals or countries – often have less.

There are three areas of global concern that impact food security: overpopulation, climate change and urbanisation. Areas of the world with the highest birth rates and population, where demand often exceeds supply, also have the greatest levels of hunger and disease. Local ecosystems provide the resources a population needs for food production, health, environmental management and water. Examples include rangeland, fertile soil, nutrient cycling, and wildlife for hunting, among others. The local ecosystem has a certain carrying capacity, and once this is exceeded the ecosystem becomes stressed and begins to break down. This is defined as ecosystem vulnerability (Ericksen, 2008).

Food security exists in a place when all the inhabitants, have physical and economic access to sufficient, safe, and nutritious food to meet their dietary needs and food preferences



for an active and healthy life at all times. Additionally, several indicators for food security across countries/regions have been identified. Some of these include food availability, per capita food production, and supply, percentage of under-five who are underweight, percentage of under-five who are stunted, domestic food price volatility, political stability, and absence of violence as well as domestic food price index (Nathaniel and Yuni 2018).

Food Self-Sufficiency

According to FAO (1999) food self-sufficiency is a way in which a country can satisfy its food needs from its own domestic production.

A country producing sufficient food to cover its own needs—is how people typically understand the idea of food self-sufficiency, but some aspects of it are still fuzzy. It is unclear, for example, whether a country that pursues food self-sufficiency still engages in food trade with other countries. Determining how trade fits into the food self-sufficiency policies of individual countries requires further refinement of the definition of the concept and clarification with respect to how it guides government policy choice.

Some analysts define food self-sufficiency as a country eschewing all food trade and relying 100% on domestic food production to meet its food needs. This definition can be characterized as a country closing its borders and adopting complete autarky for its food sector. An extreme policy stance such as this is very rare in practice. All countries rely on imports for at least some of their food consumption, including large food exporters that produce far more food than they consume. Even, North Korea, the country with policies that most approach autarky, still imports food and accepts international food assistance (FAO, 2015a).

Given the prevalence of trade in today's global economy, a more pragmatic understanding of food self-sufficiency is domestic food production that is equal to or exceeds 100% of a country's food consumption. Trade is not ruled out within this definition, as food self-sufficiency is defined by the ratio of food produced to food consumed at the domestic level. Understood this way, food self-sufficiency is not necessarily focused on where specific foods are grown, but rather on a country's domestic food production capacity. Under this definition, self-sufficient countries may still pursue a degree of agricultural specialization in order to trade these foods with other countries. The key point is that food self-sufficient countries produce an amount of food that is equal to or greater than the amount of food that they consume (FAO, 2012: 360).

Food Production

Food production is a concept, which is associated with the production of food. In this case, raw materials are converted into ready made products for use by the human beings, either within homes or in industries. Its process comprises of scientific approaches. To



carry out the task of food production in a successful manner, there are number of aspects, which need to be taken into consideration. These include, cleaning, packing, segregating, sorting, preparing, adding ingredients in correct proportions and presenting. There are large numbers of plant and animal products, which are made use of to promote well-being. They make provision of food, which comes from both plants and animals. These include, grains, pulses, spices, cereals, honey, nuts, milk, vegetables, fruits, eggs, meat, chicken and so forth. This indicates that in promoting well-being, the individuals are dependent to a major extent on plants and animals. Altogether, plants and animals make provision of 90 percent of the global energy (Food Production, 2020).

Price of Food

Agricultural and food prices are expected to remain stable over the medium term. However, sharp price changes stemming from energy price fluctuations, adverse weather events, or trade tensions cannot be ruled out. First, higher-than expected energy prices, a key input in the production of most agricultural commodities, could affect food prices, especially grains and oilseeds. Energy prices affect agricultural production costs directly (through fuel use) and indirectly (through fertilizer and other chemicals use). They also create incentives to shift production to biofuels. Second, El Nino episodes, such as the one in 2016-17, could disrupt commodity supplies, especially at a regional level, particularly in Central America, the Caribbean, and Southern Africa. Third, the growing frequency of extreme weather events increases the risk of disruption to food production, food availability, and access to food. Finally, policy measures introduced by major producers and exporters in response to higher price shocks could also affect prices (World Bank 2018).

Food price increases have important macro- and microeconomic impacts through several channels. At the macroeconomic level, food price increases raise inflation and contribute to terms of trade shocks. At the microeconomic level, for households that are net sellers of food products, rising food prices can increase real incomes. However, on average, higher food prices raise poverty, reduce nutrition, and curtail the consumption of essential services such as education and health care (World Bank 2011).

Domestic prices of agricultural commodities go up in January 2021. The prices of major commodities monitored, during the month under review, recorded increases, ranging from 0.1 per cent for white maize to 5.5 per cent for rice (agric). The prices of other commodities such as beans (brown), garri (yellow), groundnut oil, beans (white), and palm oil also increased, by 4.8 per cent, 3.2 per cent, 3.1 per cent, 3.0 per cent, and 2.7 per cent, respectively.

Price developments witnessed across all the commodities monitored during there view month were attributed to the effects of uncertainty surrounding the second wave of the



COVID-19 pandemic, the hike in PMS pump price and electricity tariffs, which increased the cost of production, transportation, and storage of the commodities. Other drivers were insecurity in key producing areas and unhealthy price fixing by middlemen. However, the price of rice, (imported high quality) fell by 0.4 per cent, as a result of the relaxation of the land border protection policy (CBN, 2021).

Relationship Between Anchor Borrowers and Food Security

The purpose of the Anchor Borrowers' Program (ABP) is to create economic linkage between smallholder farmers and reputable large-scale processors with a view to increasing agricultural output and significantly improving capacity utilization of processors. It also intended to, among other things, increase banks' financing to the agricultural sector, reduce agricultural commodity importation and conserve foreign external reserves, increase capacity utilization of agricultural firms, create new generation of farmers/entrepreneurs and employment, assist rural smallholder farmers to grow from subsistence to commercial production levels, deepen the cashless policy and financial inclusion and reduce the level of poverty among smallholder farmers. So far, from 2015, Anchor Borrowers Program has release 497.2 billion loan to 2,504,690 to Small Holders Farmers to enhance food security (CBN, 2021).

Empirical Review

Anchor Borrowers Programme and Food Security

Ayinde et al (2018) assess anchor borrower's programme a central bank of Nigeria's intervention on rice production in Kwara State, Nigeria. Data for the study were sourced primarily from rice producers with the aid of a structured questionnaire. The findings reveal that 88.1% of the beneficiaries breached the agreement and refuse to deliver their produce to the Anchor Borrowers' Programme due some reasons and their average estimated yield per hectare of paddy rice for all beneficiaries was 3.94 metric tons per hectare. Anchor Borrowers' Programme had a positive effect on the income of the beneficiaries. Therefore, the study recommended that the governments must intervene with subsidized lending (seeking no profit, amortizing high transaction costs, spreading the risk on a national basis), since most borrowers in rural areas are small farmers (i.e. poor), low cost credit responds to poverty alleviation considerations.

Nathaniel & Yuni (2018), evaluate the performance of food crop sector in Nigeria from 1999 – 2016, using SWOT analysis, their findings show that Nigerian is having food insecurity problem: - very low value of food production per capita; low and declining average dietary energy supply adequacy; very high variability in per capita food production and supply, and a high depth of food deficit that has been on the increase since 2006. The result also shows that agriculture's contribution to Nigerian GDP has



consistently declined from 37.5 percent in 2002 to 21.2 percent in 2016, and that food crop production declined from over 34 percent of the GDP in 2002 to 18.6 percent in 2016. They said due to this high depth of food deficit, over 14 million people in the country are undernourished, and this has been increasing geometrically since 2005. That more than six million of her under-five children are stunted, and the consumer price of foods has been high and rising. Compared to other countries, there has not been any significant improvement in reducing the depth of food deficit in the Nigeria.

Romanus, Evans & Precious (2019) wrote on Agricultural Sector Performance, Institutional Framework and Food Security in Nigeria. They employ the ARDL (Autoregressive Distributed Lag) with data from the Central Bank of Nigeria (CBN) statistical bulletin, Food and Agriculture Organisation (FAO), World Development Indicators (WDI), and World Governance Indicators (WDI). Food security is used as the dependent variable proxied by the number of the people undernourished under the stability dimension; agricultural sector performance and institutional framework as the independent variables, while population is a control variable. Two agricultural variables (agriculture production and agriculture credit) are employed with six variables of institutional framework. The findings show that in the log-run, agriculture production and agriculture credit (agriculture variables) will increase food security by reducing the number of people undernourished by 2% and 18%, respectively. In terms of institutional framework; political stability and absence of violence and rule of law increase food security by reducing undernourishment by approximately 69% and 29%, respectively; control of corruption and voice and accountability tends to reduce food security by increasing the number of the people undernourished by 74%, 51% and 63% respectively.

Food Sufficiency

Jennifer (2017) look at the concept of food self-sufficiency and makes the case that policy choice on this issue is far from a straightforward binary choice between the extremes of relying solely on homegrown food and a fully open trade policy for foodstuffs. It shows that in practice, food self-sufficiency is defined and measured in a number of different ways, and argues that a broader understanding of the concept opens up space for considering food self-sufficiency policy in relative terms, rather than as an either/or policy choice. Conceptualizing food self-sufficiency along a continuum may help to move the debate in a more productive direction, allowing for greater consideration of instances when the pursuit of policies to increase domestic food production may make sense both politically and economically.

Cheng and John (2000) assess the comparative advantage and protection of China's major agricultural crops using a modified Policy Analysis Matrix (PAM) and 1996 to 1998 data. they consider the following commodities: early indica rice, late indica rice, japonica



rice, south wheat, north wheat, south corn, north corn, sorghum, soybean, rapeseed, cotton, tobacco, sugarcane, and a subset of fruits and vegetables. Consistent with the intuition of the simple Heckscher-Ohlin model, their results strongly suggest that China has a comparative advantage in labor-intensive crops, and a disadvantage in land-intensive crops. Specifically, land-intensive grain and oilseed crops are less socially profitable than fruits and vegetables. Within the grain sector, high quality rice and high-quality north wheat have a more comparative advantage than early indica rice and south wheat, respectively. Their findings suggest that China's current grain self-sufficiency policy incurs efficiency losses. Their results shed light on likely changes in agricultural trade patterns in China, if accession to the World Trade Organization (WTO) takes place. They also stress the need for greater input productivity in grain production to improve its competitiveness if China keeps its food security policy.

Vincent, Oliver and Basile (2014) examine Food crop production in Tanzania: Evidence from the 2008/09 National Panel Survey. The report provides analysis of long season food crops for the first wave of the NPS (2008/09) concentrating on supply response, the price and non-price factors determining production and how responsive farmers are to these factors. The report highlights important limitations in the NPS data for analysis of supply response, notably the absence of market prices and that few farmers report using purchased inputs. Nevertheless, we identify certain core determinants of production and show that farmers are responsive to prices.

Fiona and John (2015) examine Sustainable Food Production: constraints, challenges and choices by 2050. The study mentioned that meeting the future food demand was frequently articulated as a crisis of supply alone by some dominant institutions and individuals with prior ideological commitments to a particular framing of the food security issue. The analysis indicates that the crisis can be avoided by the choices we make. The food security debate will be enriched by a rigorous evaluation of all these choices and recognition that the eventual solution will reside in a mixture of these choices. The study says we could shift from our current paradigm of productivity enhancement while reducing environmental impacts, to a paradigm where ecological sustainability constitutes the entry point for all agricultural development. That, If we embraced this new paradigm, sustainable governance and management of ecosystems, natural resources and earth system processes at large, could provide the framework for practical solutions towards an intensification of agriculture. Such a paradigm shift could reposition world food production from its current role as the world's single largest driver of global environmental change, to becoming a critical part of a world transition to work within the boundaries of the safe operating space for humanity with respect to the planet's biophysical processes and functions.



Obayelu (2006) examines the severity of food price increases and articulates its immediate and remote causes on nutritional status of Nigerians using two main approaches. The first approach was the use of primary data from 396 households in North Central Nigeria for empirical evidence. The second approach was the collection of secondary information from the United Nations Development Programme (UNDP) report, World Bank (WB), International Food Policy Research Institute (IFPRI), Food Insecurity and Vulnerability Information Mapping System (FIVIMS), Famine Early Warning Systems Network (FEWSN), Food and Agriculture Organization (FAO), World Food Programme (WFP), United Nations Children's Fund (UNICEF) food security assessment. His results of the analysis show that, the food price increases affect nearly every agricultural product in Nigeria without corresponding increase in disposable income of families and population groups (especially the vulnerable groups). Households in Nigeria spend between 70 to 80% of their income on food, leaving about 60% people to food difficulty problem. Although government had intervened through distribution of 65,000 metric tons of assorted food from the Strategic Food Reserve, release of N80 billion for the importation of 500,000 metric tons of rice and 11,000 metric tons of grains to complement the local output, six months waiver on import duties on rice, much concentration on grain alone seen not to have significantly improved the nutritional status of Nigerians. To cope, majority of people are forced to reduce their nutritional intake, consume more carbohydrate food at the neglect of protein, pulling out of children from school for work and sale of key productive assets. There is the need for safety net programmes, provisions of critical community services to enhance households' nutritional status.

Onwusiribe, Nto, Oteh and Agwu (2021) examined the dynamics of food price volatility and households' welfare in Nigeria from 1990: Q1 to 2019: Q4n. . they sourced data for the study from FAO and the World Bank. They estimated the Quadratic trend equation, Generalized Autoregressive Conditional Heteroscedasticity (GARCH) and Auto-Regressive Distributed Lag (ARDL) models and forecast the changes in food price past COVID-19 pandemic period. Food prices, depth of food deficiency, food import, and food production index had a significant short-run impact on the households' welfare. Policymakers should focus on the short-term benefits while formulating policies aimed at households' welfare. The post-COVID -19 recovery policies aimed at the household **level will be impactful in the short-run compared to the long-run.**

Theoretical Framework

Structural Change Theory

This study adopted the structural change theory as framework. This was developed by Levis Arthur (1954) he called it Development with Unlimited Supply of Labour. According



to him, economy is basically made up of the following: traditional (Subsistence) sector and the other is the modern (capitalist, industrial or manufacturing) sector. This gave rise to the two-sector model. The theory has it that the development of an economy is dependent on the growth of two sectors.

The agricultural sector and the industrial sector are interrelated. The agricultural sector employs capital, labour, expertise and is also a final consumer of the output of the industrial sector, while the industrial sector employs labour and inputs of the agricultural sector.

This theory focuses on the mechanism by which underdeveloped economies can transform their domestic economic structures from a heavy emphasis on traditional subsistence agriculture to a more modern and more advanced agricultural practice through heavy financial support in order to attain industrial breakthrough. The benefits here can only be achieved if and only if the government support system is created which provide the necessary incentives, economic opportunities and most importantly access to needed inputs to enable expansion in output and raise productivity. The theory suggested structural changes that control productivity examples: bank loans, fertilizers distribution, public credit agencies and so on (Levis 1954)

This study adopted structural change theory because Nigeria lost great opportunity since 70s by neglecting Agricultural sector for a sector that has no consistent and sustainable guarantee of income and food security. Whereas Developed countries today succeed with adoption of structural change theory, Therefore, Nigeria can re-track her lost opportunity by complying with structural change theory.

Methodology

The dataset analysis in this study included data on agricultural productivity that was supported by financial facilities through the Anchor Borrower. The analysis covered cereal (Maize, rice) and tuber (Casava). The purpose of this research is to assess and evaluate the impact of the Anchor Borrower loan on targeted agricultural products. The researchers use descriptive statistics such as tables and graphs to present findings. Similarly, trend analysis is used to show the positions of production level annually as recorded to investigate the association between the variables of interest.

Data Presentation

Table 1: Crops Production and General Prices for Food Items

Year	Maize	(%)	Rice	(%)	Cassava	(%)	Prices of food items	(%)
s	Tones	Tones	Tones	Tones	Tones	Tones	(₦)	Tones
2010	7676850	6.9	4472520	6.2	42533180	7.2	744.1671	4.9
2011	8878456	7.9	4612614	6.4	46190248	7.8	819.975	5.4



2012	8694900	7.8	5432930	7.5	50950292	8.6	911.6779	6
2013	8422670	7.5	4823330	6.7	47406770	8	998.3622	6.5
2014	10058968	9	6002831	8.3	56328480	9.5	1092.718	7.1
2015	10562050	9.4	6256228	8.7	57643271	9.8	1200.479	7.8
2016	11547980	10.3	7564050	10.5	59565916	10.1	1377.073	9
2017	10420000	9.3	7826120	10.9	55068732	9.3	1646.617	10.8
2018	11000000	9.8	8403000	11.7	55867727	9.5	1882.389	12.3
2019	12700000	11.3	8435000	11.7	59411510	10.1	2139.908	14
2020	12000000	10.7	8172000	11.3	60001531	10.2	2483.842	16.2
Total	111961874	100	72000623	100	590967657	100	15297.21	100

Source: FAO 2022

Descriptive Statistics

Table 2

Statistic	Maize Production	Cassava Production	Rice Production
Mean	10178352	53724332	6545511.
Median	10420000	55867727	6256228.
Maximum	12700000	60001531	8435000.
Minimum	7676850.	42533180	4472520.
Std. Dev.	1602444.	6033438.	1579829.
Skewness	-0.031	-0.660	-0.058
Kurtosis	1.865	2.045	1.382
Jarque-Bera	0.592	1.217	1.206
Probability	0.744	0.544	0.547
Sum	0.000	0.000	72000623
Sum Sq. Dev.	0.000	0.000	0.000

Table 2 summarizes the production figures as a result of Anchor borrower intervention. Maize, cassava, and rice output averages are 10,178,352, 53,724,332 and 6,545,511 tonnes, respectively. The skewness row values suggested that the data is normally distributed with values 0., which was verified by the probability values. The probability values of 0.743718, 0.544183, and 0.547144 (shows that p. values > 0.05) which implies that dataset is normally distributed. The Kurtosis values for the productions are among the key aspect of the summary statistics. Kurtosis is a metric that assesses the peak and flatness of a production. The raw numbers of 1.865117 for maize, 2.044474 for cassava, and 1.381991 for rice indicate that maize and rice will have a lot of values below the mean production (flat).



Cassava values, on the other hand, are close to 3, indicating that cassava output is promising and will grow in the next years.

Table 3. Summary Statistics

	Maize Production	Cassava Production	Rice Production	Prices
2010-2014 (%)	39.1	41.2	35.2	29.9
2015-2020 (%)	60.9	58.8	64.8	70.1
Increase (%)	21.9	17.6	29.6	40.3
Mean (2010-2014)	8,746,368.8	48,681,794	5,068,845	913.38004
Mean (2010-2014)	11,371,671.67	57,926,447.83	7,776,066.333	1,788.38475
Difference	2,625,302.867	9,244,653.833	2,707,221.333	875.00471

the study revealed that the Anchor borrower intervention initiated in 2015 has increase food production on a slow rate from what was obtainable before the program was introduced. Looking at the mean for the years before and up to 2020, it also revealed that maize has increase with 2,625,302.867 tones, cassava increase with 9,244,653.00 tones, rice increase with 2,707,221.333 tones and the price of food items also increase with #875.00471 from 2015 to 2020 with the programme.

Trend Analysis

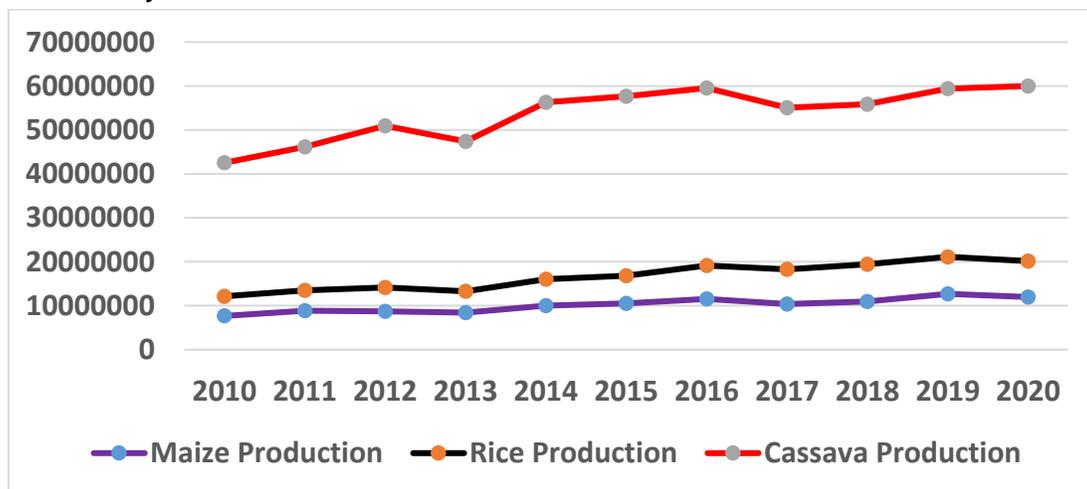


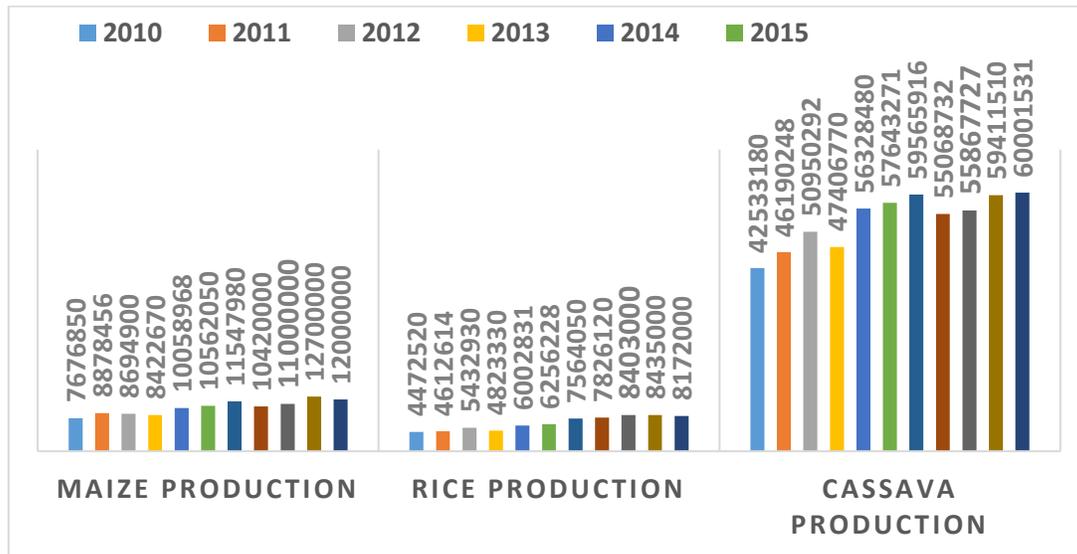
Figure 1: Trend Diagram of Production

Figure 1: Agriculture Production

The trend in the production of cassava continues to witness an upward movement, indicating increasing production as a result of the intervention. Maize production had a linear trend before the intervention of Anchor Borrower programme, with the intervention, there was an insignificant but steady increase in production and sharp



declined in 2020. The production of rice declined between 2017 and 2018, increased in 2019 and further decreased in 2020.



The Figure 2: Bar Graph of Production

Figure 2 shows the results along with the numerical values of the crops under investigation. The graphs illustrate that maize production has linear or flat bars and that there has been no major increase in production. The production of rice may be compared to have similar movement. Cassava, on the other hand, has been increasing since 2017 and continues to exhibit increasing in production tonnes.

Price Analysis

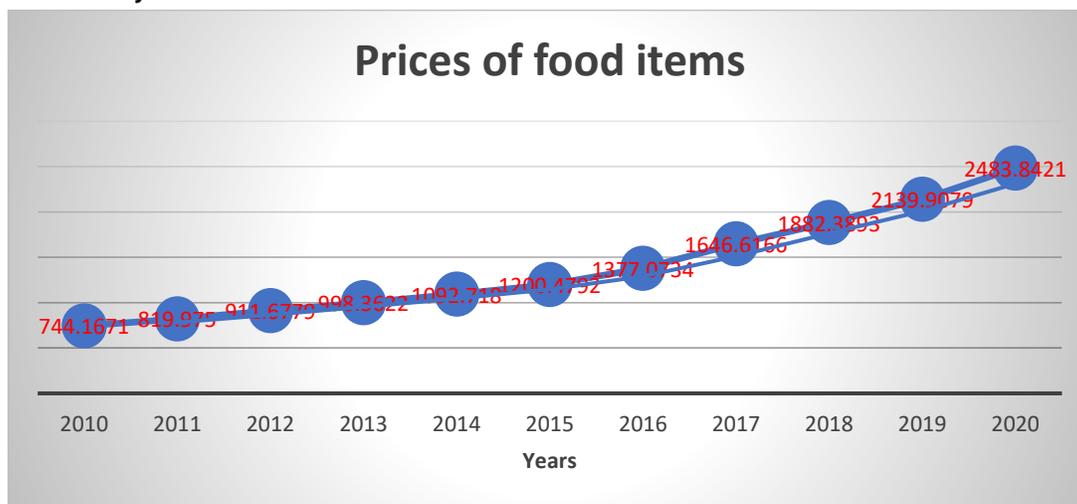


Figure 3: Prices of Food Items



The trend analysis in figure 3, shows raising trend of price of food items in the market. Although, the analysis of food production of some selected crops in figure 2 and 1 was not very significantly effective after the Anchor borrower intervention, the price of food items continues to have an upward trend. The likely reason for the slow of production output and increase on price of food items could be that the intervention of the Anchor Borrowers Program is not effective to provide needed outputs for the farmers on the areas of fertilizer and irrigation.

When population of a country is growing rapidly above expected agricultural output, it could lead to food scarcity and expensive too.

Additionally, Lack of border control could ease export of agricultural produce and in turn make the available one's scarce and expensive. Likewise, closing border completely will deny us from having access to those products we couldn't produce locally. Therefore, making the available ones insufficient and cost.

Exchange rate could contribute to poor Agricultural output and as well increase the price of food items because Nigeria use multiple exchange rates and such fuel inflation rate. Inflation has multiplier effect on Agricultural output and input. Example, the cost of fertilizer, other farming equipment and transportation of food items lead to poor production and price volatility of food items.

Discussion of Results and Findings

Table 2 summarizes the production figures as a result of Anchor borrower intervention on selected crops such as Maize, cassava, and rice. The Maize output averages was 10,178,352, Cassava was 53,724,332 and Rice was 6,545,511 tons, respectively. The skewness row values suggested that the data is normally distributed with values 0., which was verified by the probability values. The probability values of 0.743718, 0.544183, and 0.547144 (shows that p. values > 0.05) which implies that dataset is normally distributed. The Kurtosis values for the productions are among the key aspect of the summary statistics. Kurtosis is a metric that assesses the peak and flatness of a production. The raw numbers of 1.865117 for maize, 2.044474 for cassava, and 1.381991 for rice indicate that maize and rice will have a lot of values below the mean production (flat). Cassava values, on the other hand, are close to 3, indicating that cassava output is promising and will grow in the next years.

The trend in the production of cassava continues to witness an upward movement, indicating increasing production as a result of the intervention. Maize production had a linear trend before the intervention of Anchor Borrower programme, with the intervention, there was an insignificant but steady increase in production and sharp decline in 2020. The production of rice declined between 2017 and 2018, increased in 2019 and further decreased in 2020.



Figure 2 shows the results along with the numerical values of the crops under investigation. The graphs illustrate that maize production has linear or flat bars and that there has been no major increase in production. The production of rice may be compared to have similar movement with maize. Cassava, on the other hand, has been increasing since 2017 and continues to exhibit increasing in production tonnes figure 3, shows raising trend of price of food items in the market. the price of food items continues to have an upward trend from 2015 through 2020. This also means Anchor borrower intervention is not significant.

Conclusion

The main objective of this study is to assess the Anchor Borrowers Program and food security in Nigeria for the period of January, 2010 to December, 2020. Descriptive statistics and trend analysis were applied to achieve the stated objectives. The findings of the study reveal that food crops production, particularly, Maize, Cassava and Rice production appreciate on a slow rate while the price of food items on the increase. This means that Anchor Borrowers Program has less significant effect on food security in Nigeria.

Recommendations

Many Countries have developed successfully and shifted resources from agriculture to manufacturing. Africa, particularly Nigeria is still lacking behind due to lack of progress in agricultural productivity. However, to gain progress in Agriculture and move to manufacturing, the following must be address:

1. Emphases of Anchor borrowers' program should be geared towards boosting irrigation system and ensure the right type of fertilizers are available at the right price, at the right times so as to boost production of maize and rice.
2. Trade Policy should be considered seriously to restrict agricultural export, particularly, maize and rice and allow legal importation of those food we couldn't produce to avoid food price increase.
3. CBN should stabilise exchange rate through policy and intervention in the foreign Exchange market with proper management of foreign reserves.

Suggestion for Further Study

The study gives the findings that Anchor Borrowers Program has less significant effect on food security and as well on price of food items in Nigeria. Therefore, we recommend that further study be carried out to assess Anchor Borrowers Program on food security using primary source to know it relationship with farmers income.

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