

## **Enhancing Agricultural Policy for Sustainable Rice Production in Ebonyi State, Nigeria**

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### **Abstract**

*This study delves into the need for improved agricultural policies to foster sustainable rice production in Ebonyi State, Nigeria. Since agriculture plays a pivotal role in the state's economy, the research examines existing policy, identifying its impact on rice production and economic growth. Utilizing a mix of quantitative and qualitative methods such as surveys and interviews, the study assesses the current state of agriculture in Ebonyi. The study used a cross-sectional survey research design to measure food security and ABP in Ebonyi State, Nigeria. The study used a mixed method of data collection, including structured questionnaire and in-depth oral interviews with rice farmers in Ebonyi State, Nigeria. The findings reveal the need for the Federal and State Governments to sustain the Anchor Borrowers' Programme, as well as promote other bank financing options for farmers in Nigeria.*

**Keywords:** *Enhancing, agricultural, policies, sustainable, development, rice production.*

### **Introduction**

Food is one of the necessities of life and it stands first among all others which include clothing and shelter. Food is essential because it sustains human existence by nourishing the body (Joshi, 2019). Lapedes (1997) opines that food is the material that enables man to grow and reproduce itself (as cited in Ohwofasa, Olueh, & Okoh, 2013, p.353). Which is why there are concerns that the Russia - Ukraine war is seriously threatening food security across the globe through its impacts on wheat, oil and fertilizer exports, in a world already confronting challenges presented by COVID-19 and climate change. Ehui, Jenane and Waldamann (2022) note that Russia's invasion of Ukraine has led to the destruction of lives, homes and infrastructure, as well as have caused humanitarian crisis that exacerbated global food insecurity resulting in a catastrophe beyond the devastating effects of the World War II. Agriculture is a major component of the Nigerian economy that has greater potential to address challenges facing the country in achieving food security and poverty eradication. It had been estimated that the Federal Government spends huge amount of money on the importation of agricultural production especially rice. Annually, the government spends over N400 billion on importation of rice. Regrettably, Nigeria's agricultural sector which was supposed to ensure food security had suffered years of neglect (Falayi, 2019), before being confronted with the challenges posed by the war in Ukraine, the COVID-19 and insecurity in the north-eastern part of Nigeria.

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The agricultural sector in Nigeria, which supports over 70% of the population and accumulates foreign exchange reserves, is facing challenges due to rising food insecurity and etho-religious conflict (Falayi, 2019). To address these issues, the Central Bank of Nigeria (CBN) established the Anchor Borrowers' Programme (ABP) in 2015 to improve agricultural productivity and ensure food security for the country's 300 million population by 2050 (United Nations, 2017; Alake, 2021). The ABP aims to enable rural farmers to increase production, reduce importation, and preserve external reserves. It was in view of the foregoing that this study examined rice production in Ebonyi State and its contribution to food security, since the introduction of the Anchor Borrowers' Programme. Ebonyi was chosen purposively as the area of this study in view of its strategic position in the state especially when it comes to rice processing and marketing. This study examines how the ABP initiative has contributed to improved rice production, with a focus on small holder rice farmers in Ebonyi State Nigeria. The general objective of this study is to examine agricultural policy for rice production in Ebonyi State, Nigeria. The specific objectives are to:

1. examine how central bank loans to small scale farmers have contributed to rice production in Ebonyi State;
2. ascertain how import substitution has contributed to rice production in Ebonyi State;
3. determine the extent at which modern farming has contributed to rice production in Ebonyi State.

This study addressed the following hypotheses:

There is no significant relationship between central bank loans to small scale farmers and rice production in Ebonyi State; and

Import substitution does not have significant contribution to rice production in Ebonyi State.

In addition, the work is structured into introduction, literature review, theoretical framework, methodology and concluding remarks.

## **Literature Review**

### **Concept of Food Security**

The world has over the years taken more comprehensive view of food and nutrition. From the 1960s up till the 1974 World Food Conference held at a time of a global food crisis and aimed to make food available at stable prices in both national and international markets, the emphasis has largely been on food supply. A lot of developing countries then focused on achieving this objective through the Green Revolution – through the use of improved seedlings, fertilizers and irrigation to grow much more food (FAO, 2010). Sen (1999) noted that people could be food insecure even when there was no general food shortage as can be seen in the case of Bangladeshin 1974 suffering famine even though that was a year of peak food production. As a result of these and other factors, the concept of food security was expanded to: “ensuring that all people at all times have both physical and economic access to the basic food that they need” – a change in emphasis from availability to access (FAO, 1983). Later, the concept was broadened further to take into account such factors as the nutritional value of food and people’s social and cultural preferences. Attaining food security is an important challenge for the world community. This concept was summarized in the definition of food security presented at the World Food Summit in 1996: “When all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life” (FAO, 2010).

A lot of people view it as part of their constitutional rights but nearly one billion people around the world especially in the food deficit and low-income developing countries are still living with chronic poverty and undernourishment (IEG, 2011). But the level of the present hunger and malnutrition crisis across the world is alarming and the WFP (2023), predicted more than 345 million people face high levels of food insecurity in 2023.

Food security and sustainable food security are influenced by various physical, social, economic, and political factors globally. Socio-economic factors, including population growth, urbanization, income, and agricultural productivity, significantly impact global food security. The ethical and human rights dimension of food security, first recognized in the UN Declaration of Human Rights in 1948, has gained attention. Over 40 countries have the right to food, with some countries potentially enshrining it (McClain-Nhlapo, 2004). Also, the World Bank report on hunger and poverty conceptualized food security as, “the access by all people at all times to enough food for an active and healthy life” (World Bank, 1986, p. 12). Lack of food security has disastrous effects. Chronic malnutrition, which persists for months or years, has a severe impact on a population's level of health. Infant and infant deaths are rising quickly, (FAO, 1983). Disparities in health and mortality rates between men and women often lead to economic decline and food shortages, causing widespread mortality. To maintain food security in developing countries, some implement agricultural strategies or make significant purchases on foreign marketplaces.

### **Theoretical Framework**

Production theory explains the relationship between factors of production and output. It deals with the question of ‘How to produce?’ and discusses the supply side of the pricing of products. Theory of production concerns with explaining how a firm chooses the optimum factor combination either: to minimize the cost of production for given level of output or to maximize the level of output for a given cost/set of input. Although, the theory of production is in its first instance applicable to the firm, its application also extends to an economy as a whole or even specific sectors of an economy. In recognition of the fact that a country can hardly grow and sustain itself without productive capacity, successive governments in Nigeria from independence have continuously endeavored to boost the country's productive capacity across the various sectors of the economy through various intervention programmes and policies. Shortly after independence, before the oil boom, much attention was given to boosting production in non-oil sectors such as the agricultural sector. Then, agriculture was the leading sector in the Nigerian economy as it contributed 65 per cent to Nigeria's GDP, 70 per cent of her aggregate exports and over 70 per cent of employment for the population. However, the narrative changed as the oil boom period gradually crept in early in the 1970s. From an economy driven by the agricultural sector, it became one that was driven by the oil sector and eventually became dependent on it. These necessitated interventions such as the Anchor Borrowers' Programme as the federal government continues in its quest to diversify the economy and once more make the non-oil sector its mainstay.

### **Methodology**

The study used a cross-sectional survey research design to measure food security and ABP in Ebonyi State, Nigeria. The design ensures data is relevant and accurate for analysis, aiming to understand and solve problems. The target population is rice smallholder farmers who have benefited from ABP in the state, which is a major rice producer and a reference point for Nigeria's rice production design to avoid manipulation or control. (Chidiebere-Mark, Ohajianya & Onyeagocha, 2019: 238). The selection of participants for the study was based on multistage sampling techniques. This method

allows a combination of two or more probability sampling in most effective and efficient approach; and thus, it can be described as a sampling within the sample (Alvi, 2016). While the stratified random sampling was used to form strata for the rice producing farmers in the State, the random sampling was employed to randomly select respondents from each of the strata (groups). The study used stratified random sampling and purposeful interviews to ensure fair representation of the population. Smallholder farmers from Ivo, Onicha, and Abakaliki local government areas were selected. The sampling frame was extracted from a Central Bank of Nigeria publication. Interviews were conducted with key figures for accurate answers. The study used a mixed method of data collection, including structured questionnaires and in-depth oral interviews with rice farmers in Ebonyi State, Nigeria. The questionnaires were divided into five sections, focusing on personal bio-data, research questions related to ABP, rice production, promotion of employment and entrepreneurship, poverty reduction among smallholder farmers, and transforming rural smallholder farmers from subsistence to commercial rice production levels. The survey took place between June and August 2022, with 442 questionnaires administered and 400 recovered. The study used questionnaire and interviews data for quantitative and qualitative analysis, focusing on respondents' characteristics. Regression, Pearson's product moment correlation, and t-test were used for the first, second, and third hypotheses, respectively, in SPSS version 23.

## Data Presentation and Analysis

Table 1: Demographic Characteristics of Respondents

		Frequency	Percentage	Cumulative Percent
Gender	Male	263	65.8	65.8
	Female	137	34.3	100.0
	Total	400	100.0	
Age	18-25	142	35.5	18.8
	26-35	107	26.8	56.8
	36-45	98	24.5	97.0
	46-55	25	6.3	99.5
	56 and Above	28	7.0	100.0
	Total	400	100.0	
Marital Status	Single	112	28.0	28.0
	Married	242	60.5	88.5
	Divorced	39	9.8	98.3
	Widowed	7	1.8	100.0
	Total	400	100.0	
Education	SSCE	75	18.8	18.8
Qualification	OND	152	38.0	56.8
	HND	161	40.3	97.0
	BSc	10	2.5	99.5
	Masters or Doctoral	2	.5	100.0
	Total	400	100.0	

Beneficiary of ABP	Yes	64	16.0	16.0
	No	336	84.0	100.0
	Total	400	100.0	
Period of benefits from ABP	0-1 year	52	13.0	1.3
	2-3 years	115	28.8	2.5
	4 years & above	167	41.8	6.3
	Not Applicable	66	16.5	42.5
	Total	400	100.0	100.0

From Table 4.1, the number of male respondents is 263 (65.8%), and female respondents are 137 (34.3%). Respondents that were between ages 18-25 are 142 (35.5%), ages between 26-35 was 107 (26.8%), ages between 36-45 are 98 (24.5%), ages between 45-55 are 25 (6.3%), and ages between 56 and above are 28(7.0%). 112 (28%) are single, 242 (60.5%) are married, 39 (9.8%) are divorced, and 7 (1.8%) are widowed.

From Table 4.1, respondents with Senior Secondary School Certificate are 75 (18.8%), OND are 152 (38%), HND are 161 (40.3%), BSc are 10 (2.5%) and Postgraduates are 2 (0.5%). The number of non-beneficiary is 64 (16%), and the number of beneficiaries is 336 (84%). 0-1 years are 52 (13%), 2-3 years are 115 (28.8%), 4 years are 167 (41.8%) and 66 (16.5%) not applicable.

#### Test of the Hypotheses

**Objective One:** To examine how central bank loans to small scale farmers impacted rice production in Ebonyi State

**Hypothesis One- H0:** There is no significant relationship between central bank loans to small scale farmers and rice production in Ebonyi State. To test the first hypothesis, we use linear regression analysis presented in Table 2.

Table 2: Results of the regression Analysis for the first hypothesis

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
1 (Constant)	2.856	0.088		32.634	0.000
Bank loan	0.335	0.032	0.463	10.419	0.000

a. Dependent Variable: Food Security.

From Table 4.31, the relationship between bank loan and rice production can be expressed as:

$$FS = 2.856 + 0.335BL$$

This implies that as the central bank loan to small holder farmers increased in Ebonyi state, rice production in the state also increased by 0.335, at a constant rate of 2.856. The model performance shows that the R-squared is 0.614, which means that the response variable "Central Bank loan" explains 61.4% of the predictor, and the adjusted R-squared is 0.522. The hypothesis was rejected at  $(F_{1,398}) = 108.558$ , p-value of  $0.000 < 0.01$ . Since the null hypothesis was rejected at a 1% level of significance, it shows positive relationship between the central bank financing and rice production in Ebonyi State.

**Objective Two:** To ascertain how import substitution contributed to rice production in Ebonyi State, Nigeria

Hypothesis Two- H0: Import substitution does not have significant contribution to rice production in Ebonyi State

To test the first hypothesis, we use linear regression analysis presented in Table 3

Table 3: Results of the Regression Analysis for the second hypothesis

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	0.503	0.115		4.384	0.000
	Import substitution	0.497	0.040	0.525	12.334	0.000

b. Dependent Variable: Food security

From Table 4.32, the relationship between import substitution and food security can be expressed as:

$$RP = 0.503 + 0.497 \times IS$$

The results show that as import substitution program increases in Ebonyi state, there is a positive impact on rice production by a factor of 0.497. The model performance shows that the  $R = 0.805$ , R-squared is 0.649, which means that 64.9% of the predictor is explained by the response variable Anchor Borrowers' Programme, and adjusted R-squared is 0.647. The hypothesis was rejected at  $(F_{2,397}) = 366.37$ , p-value of  $0.000 < 0.01$ . Since the null hypothesis was rejected at a 1% level of significance, it shows positive evidence that import substitution has promoted production in Ebonyi State.

## Discussion

A survey of 347 youths aged 18-45 from four hundred participants in Nigeria revealed that the Anchor Borrowers' Programme has benefited 280 out of 336 who have attended higher institutions. The survey assessed Nigerian agricultural policy, finding a fair but unsatisfactory perception. Bank financing has boosted rice production and food availability in Ebonyi State, with respondents supporting import substitution strategies. Innovative financing has also contributed to rice production, with respondents attesting to its ability to transform smallholder farmers from Subsistence to Commercial Production levels. These financing options have created 13 million direct and indirect jobs across six geo-political zones, including Ebonyi State. The survey suggests that these financing options should be given due attention. This study aimed to examine the impact of bank financing on rice production in Nigeria. Statistical analysis showed a significant relationship between bank financing and rice production in Ebonyi state, positively affecting Nigeria as a whole. Import substitution also contributed to rice production, reducing Nigeria's rice import bill from \$1.05 billion to \$18.5 million annually. The Bank's agricultural sector interventions created 13 million jobs. Innovative financing significantly contributed to rice production in Ebonyi State, with a Pearson product-moment correlation coefficient of  $r=0.634$ . Finally, innovative financing significantly contributed to financial inclusion in the state.

### Central Bank Loan and Rice Production in Ebonyi State

Food security is a significant development challenge, affecting health, poverty, and livelihoods. The Central Bank of Nigeria (CBN) established the Anchor Borrowers' Programme in 2015 to improve agricultural productivity and guarantee food security for the world's third-most populous country by 2050 (United Nations, 2017). A study in Ebonyi State, Nigeria, found a significant relationship between bank financing and rice production, boosting production, reducing importation, and reducing food prices. This

finding aligns with previous research, which also found that bank financing positively impacts agricultural commodity prices (Saheed, Alexander, Isa and Adeneye, 2018). Yusuf, Nofiu, and Ojo (2022) found that over 73.97% of rice-out-growers were food secure, and 17.81% were food secure. This suggests that bank financing and the Anchor Borrowers' Programme have positively impacted food security in Nigeria (Abdulazeez et al., 2018).

#### Import Substitution and Rice Production in Ebonyi State

The agricultural sector remains strategic for national food security and poverty reduction as over 70 per cent of the labour force is engaged in the sector” and import substitution can be identified as one active strategy to aid food security (Egbulonu, Duru & Echeta, 2020, p. 295). Thus, this study aimed at ascertaining how import substitution contributed to rice production in Ebonyi State. The study found that import substitution has significantly contributed to rice production in Ebonyi State ( $(F_{2,397}) = 366.37$ , p-value of  $0.000 < 0.01$ ). Results specifically reveals that there are implementable import-substitution policies/strategies put in place to aid rice production; import substitution has helped to provide a mechanism for restoring degraded food security in State; local production of food products has been encouraged through restriction and discrimination of imports of foods; Government’s import substitution strategies have not been properly implemented in Ebonyi State. Thus, the study uncovers that import substitution has been of significant benefit in terms of rice production in Ebonyi state. In same vein with Umeh and Adejo (2019), the Anchor Borrowers' Programme (ABP) in Nigeria has been found to create employment, increase income, and improve cultural practices among rice farmers (Wijaya, Ilmi & Darma, 2020). The program has also boosted rice production, reducing importation and addressing the country's negative balance of payment on food.

#### Concluding Remarks

Following the test statistics and the results obtained, it was established that the ABP contributes towards solving the challenge of food insecurity in Ebonyi State, where the study was conducted. This study showed that the Anchor Borrowers’ Programme has increased rice production, agricultural commodity and food supply in Ebonyi State and also by extension, other States in the country where the programme has been implemented. Furthermore, the study confirmed that bank financing supported rice production in the State. Additionally, the study established that import substitution contributed to rice production in Ebonyi State. It also found that innovative financing has significantly impacted on rice production as well as contributed to financial inclusion in the State. Clearly, Nigeria’s food security programme of increasing agricultural production especially rice for self-sufficiency is still far from being realized. However, it is believed that embracing modern agriculture tools with enough credit supports for small scale farmers has positive effect on productivity. Also, improved productivity, especially in rice production as was carried out by this study, can be achieved through better access to agricultural credit, given that smallholder farmers are poor and often suffer a lack of institutional services. Therefore, there is need for successive governments to fashion out an effective loan repayment strategy so as to guarantee the sustainability of the programme.

Based on the outcome of this work, the study put forward the following recommendations:

1. Nigeria's Federal and State Governments should ensure sustenance of the Anchor Borrowers' Programme, as well as make other bank and innovative financing options available to farmers.

2. More such programmes should be encouraged in other sectors of the economy in Nigeria, such as education, Real Estate, and Small and Medium Enterprises, to mention but a few.

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