# The Effect of Anchor Borrower's Programme on Agricultural Output in Nigeria

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Abstract: The study investigated the anchor borrowers' fund effect on the agricultural output in Nigeria. Repayment of previously lent loans aren't repaid which is causing a shortage in the spread of the loans. The main objectives are to examine three of the CBN agricultural intervention programs, that is, the (Interest drawback, the Agricultural Credit Guarantee Scheme fund, and the Anchors Borrowers Program) between the period of 30 years, between 1991 and 2020. A linear model showing the relationship between the dependent and the explanatory variables was performed using the OLS method. The study's result shows that the coefficient of the interest drawback program and the Anchors Borrowers Programme are both positive and statistically significant at 5% while the coefficient of the Agricultural Credit Guarantee Scheme fund proves to be negative. This implies that while the interest drawback program and the Anchors Borrowers program contribute to the output of the agricultural sector via its awareness, the Agricultural Credit Guarantee Scheme funds have not impacted agricultural output. This could also imply that the fund is not utilized by the beneficiaries in this sector. The study therefore recommends that banks should make use of agricultural credit and no other types of credit vehicles in promoting growth in the agricultural sector. In addition, banks need to guarantee that loans are directed towards their intended agricultural purpose, rather than being used for other purposes. Individuals mustn't misappropriate these funds. Furthermore, policymakers should implement the anchor borrowers program, ACGSF, and interest drawback program with an extensive campaign strategy, as this will ultimately improve the productivity of the sector and foster long-term economic growth.

# 1. Background to the Study

Agriculture is a vital component of the Nigerian economy, and the Central Bank is committed to providing financing to this sector. Providing finance to different economic sectors is necessary for an economy to sustain growth. This encourages all-embracing growth, which helps boost welfare more rapidly and contributes to the development of the country.

The development initiatives of the CBN include policy formulation and implementation, product development, and formulation for the supply of services in a competitive, efficient, and sustainable way for financial institutional operations. The initiatives focus primarily on agricultural, rural, and micro, SMBs (small and medium-sized businesses). (CBN, 2007.)

Sustainable agricultural output can be fueled by effective agricultural policies to meet the growing demand for wholesome, nutritious food, particularly for staple foods and nutrition-security crops (OECD, 2022).

According to Amaza et al. (2021), the Nigerian government has three main areas of intervention in the agricultural sector: pricing, input subsidy support, and output markets. The government implemented new agricultural policies, including the Growth Enhancement Support Scheme (GESS), Anchor Borrowers' Programme (ABP), and the prohibition on the importation of maize and frozen poultry products, in response to these initiatives and the need to ensure food security (CBN, 2021). The purpose of the ABP is to decrease Nigeria's dependency on food imports and increase the country's agricultural value chain production (Olanrewaju, 2019).

According to Adamgbe, Belonwu, Ochu, and Okafor (2020), agricultural activity is dominated by small farmers who make up 90 percent of the country's farms. These farmers mainly practice traditional methods and produce mainly for their livelihood. Government interventions have been influenced by the need to provide access to inputs and other supports for farmers to increase their productivity and enable them to implement mechanized agricultural practices, input grants, capacity-building initiatives, and export initiatives have been supporting commercial farmers. To ensure the creation of jobs on a massive scale, enhance local food production, and conserve scarce foreign reserves, the CBN, under the management of Emefiele, mobilized its focus on price, and monetary and financial system stability. (CBN 2019).

The program has improved the production of approximately 23 agricultural commodities, including maize, oil palm, rice, cocoa, cassava, cotton, tomato, and livestock, benefiting over 4.8 million smallholder farmers in Nigeria since its introduction (Mojeed, 2022).

In the period between the years 2000 to 2005, the percentage of employment in agriculture was 45 percent and has been declining over the years.

During the period 2000 to 2005, the sector contributed 26.1 percent of the total value added to GDP. Its average contribution, however, declined consistently over time to 23.9 percent in the period 2006-2010 and further down to 20.8 percent during the period 2011-2017. Between the years 2000 to 2016, the share of agricultural raw material exports witnessed a sustained improvement in the percentage of total merchandise exports. Its shares grew from a paltry 0.1 percent during the period 2000-2005 to 2.0 and 4.3 percent during the period 2006-2010 and 2011-2016 respectively. However, the share of import of agricultural raw materials to total merchandise imports reduced from 1.3 percent recorded in 2000-2005 to 1 percent during the period 2006-2010, which remained constant till 2019. In Nigeria, the agricultural sector is made up of a combination of traditional techniques and modern production. The latter are organized companies such as Obasanjo farms in sector intervention to increase agriculturalists' access to finance (mostly at single-digit rates).

Intervention is the deliberate involvement in a problematic situation to ameliorate or prevent it

from worsening. Historically, the bank has been involved in development financing since 1962. The focus of policies was on improving access to credit by preferred sectors (agriculture, manufacturing, MSMEs, and infrastructure) and the establishment and strengthening of development finance institutions. Osuma, Ikpefan, Osabohien, Ndigwe, and Nkwodimmah, (2018), say that

The poverty rate in the country increases day by day and one of the solutions made available by the CBN is making available incentives/schemes in which funds have been disbursed there, to encourage people to go into farming. The traditional role of feeding the population, providing substantial export earnings for the country, and, meeting raw materials has not been fulfilled recently by the Agricultural sector. Emerging problems that constrained the realization of the potential in the Agric sector include, among others: inadequacies in the supply and delivery of farm products, no or little technology operation, and shortage of working capital. It is therefore compelling that there is a need for the correction of the existing structural distortions in Nigeria's Agricultural sector thereby putting the economy on the path of sustainable growth.

## 2. Literature Review

According to Omankhanlen, Chimezie, and Okoye, (2020), there's an ongoing source of contention in Nigeria's economy which is the country's industrial sector's development. To ensure that savings are transferred into profitable ventures that can result in financial depth, policies should be implemented. (Samuel-Hope, Omankhanlen and Osuma, 2020). A great deal has been written on the potential to identify a gap and space for improvement. Osho, Omankhanlen, Fasanmi, and Akinjare, (2021). Studies from Nigeria have established the beneficial association

Badejo and Adeshola(2018), In Kebbi State's Argungu Local Government Area, the purpose of the research project was to evaluate how the Anchor Borrower Programme (ABP) has

the key agents for the disbursement of funds to the agricultural sector are the banks, which it is preferred to lending the funds based on the income of the customers. This has made banks (agricultural banks, microfinance banks, etc.) be discouraged from lending to peasants and small farmers of which they are of a large proportion in Nigeria. (Okunlola, Osuma, & Omankhanlen, 2019).

between financial resources and agricultural output. Nosiru (2010), for example, showed that micro-credit allowed farmers to receive the input they needed to boost agricultural productivity. The loans received by farmers in the field of studies did not contribute positively to output. This occurred because the credits were not applied or reversed. Khandker and Faruqee (2003), present empirical evidence of institutional agricultural lending to increase agricultural production. They stated that, without question, agriculture would be the principal way of improving the socio-economic situations of rural people.

Also, Johnson & Cownie (1969) highlighted that emerging countries have enhanced their agricultural output through the introduction of contemporary agricultural technologies such as chemical fertilizers, recommended seeds, tractors, and sophisticated irrigation infrastructure. However, the use of these contemporary agriculture practices requires additional resources and funding. The impact of the Anchor Borrowers' Programme on the distribution of rice farmers' income in Kebbi State, Nigeria, was investigated by Gona et al. (2020). The results of the study that used the Gini Coefficient to calculate the income inequality between program beneficiaries and non-beneficiaries showed that the distribution of income among beneficiaries of the ABP scheme is more uniform than that among non-beneficiaries. This result implies that the ABP beneficiaries' income increased as a result of the ABP credit program.

affected efforts to reduce poverty. According to the study, farmer support programs such as Anchor Borrower Programmes (ABP) have a major and positive influence on reducing

poverty through increasing access to food, creating jobs, raising living standards, and generating income. However, the report suggested that to give Argungu LGA of Kebbi State more avenues for reducing poverty, the Nigerian Anchor Borrower policy should be supported and periodically reviewed.

Through a focus on the Anchor Borrowers' Program in Anambra State, Nigeria, the research investigated the effects of Agricultural Financial Intervention on farmers' livelihoods. According to the research, farmers in Anambra State, Nigeria, found that the Anchor Borrowers' Program significantly and favorably reduced the financial burden associated with financing agriculture. Nigerian farmers' agricultural value chain was significantly and favorably improved by ABP. For farmers in Anambra State, Nigeria, ABP had a detrimental impact on profitability improvements but no discernible positive impact on increasing farmer output. The study's conclusions indicated that while the Anchor Borrowers' Programme has not yet completely improved the standard of living for farmers' cooperatives in Anambra State, Nigeria, it has the potential to make a substantial positive impact on members' quality of life. Thus, this study suggests that the government should hire experts in agriculture to help train farmers on the most effective methods to use when doing agricultural activities to boost productivity. (Onuoha and Ejikeme, 2021).

Siddiqui and Whaibi (2014) reported a surge in demand for input to boost crop output through the credit flows to farmers. The elasticity of lending, tractor numbers, irrigation, chemicals fertilizer use, and pesticides in agricultural revenue demonstrated a beneficial effect on agricultural productivity of credit (credit for manufacturing) and tube wells.

Audu and Achegbulu (2007) underlined the need for farm finance and said that the modernization of agriculture requires capital in the form of financing because new technologies need to be purchased before, they can be deployed on farms. They highlighted the need for farmers to fund consumption and pay for work throughout their companies' gestational phase. They believed that the small size of operations of most farmers restricts the extent of savings generated by overproduction and hence stagnates revenue, which is the reason for inadequate agricultural capital. Any financial intermediation structure that leaves a pool of money for farmers' investments would, therefore, catalyze agricultural production and development.

In addition, Okurut (2005) emphasized the relevance of loans by affirming that agricultural credit is a significant tool for agricultural growth in the context of developing countries. In a significant evaluation of Mali's limits on agricultural development, Kadidia (2001) referred to a lack of financial resources as one of the primary constraints of the expansion of its agriculture sector through its Malian National Committee of the Partnership to cut hunger in Africa. According to the Committee, one of Mali's key hunger-reduction strategies was to strengthen investment in rural areas by funding hydro-farm developments, developing non-bank financing institutions (financing mechanisms, alternative collateral development, financing guarantees, and insurance mechanisms), and facilitating access to credit.

## 2.1 Anchors Borrower's Programme

The Central Bank of Nigeria (CBN) developed the Anchors' Borrowers Program (ABP) as part of its developmental activities. On November 17, 2015, President Muhammadu Buhari (GCFR) announced the program, which aimed to develop a relationship between the involved anchoring enterprises and smallholder farmers (SHF) of the required core agricultural commodities. According to CBN (2016), the goal of the ABP program is to provide agricultural commodities. Field inputs in type and cash (for farm labor for smallholder farmers enhance the output of these items, stabilize the supply of agricultural inputs processors, and reduce the country's negative balance of payments on feeding.

On the harvest, the SHF supplies the agro processor (Anchor) with its product that pays

the cash equal to the farmer's account. The Program was developed from consultations with stakeholders including the Federal Ministry of Agriculture and Rural Development, government officials, farm milers, and farmers to increase agricultural and non-oil exports in the face of predictability of crude oil prices and their effect on Nigeria's revenue profile.

The overall aim of the ABP is to create economic links between smallholder farmers and reputable large-scale processors so that agricultural production can be increased and processors can be used significantly better CBN (2016). Additional goals include: enhancing funding for the agricultural sector by banks, reducing imports of agricultural goods and retention of external reserves, enhancing utilization capacities for farmer enterprises, creating new farmers and entrepreneurs and jobs, sustaining the policies of cash lessens and financial integration, and finally rural farmers are helped to grow from livelihoods to trade levels of production.

# 3. Methodology

To assess the effect of this program (ABP) on agricultural output, this study collected data from the Central Bank of Nigeria bulletin. Data is assembled on Agricultural output, ACGSF, Interest Drawback, and Anchors Borrowers Program. The Coefficient of Determination ($R^2$), t-test, and Durbin-Watson test for autocorrelation were calculated using the computer statistical software E-views 10. The data used are time series data spanning the period 1991-2020 and a simple linear model showing the relationship between the dependent and the explanatory variables. The regression was performed using the OLS method to establish a linear relationship between the variables and determine the variations in the regressions as a result of changes in the regression variables.

**Table 1: Descriptive Statistics of tables (See Table in Appendix)**

It was reported that the mean value of LAGOPUT is 9.523158, with a median value of 9.570090. It has a standard deviation statistic value of 0.230183. Its range statistic value is 9.817282 with maximum and minimum statistic values 9.817282 and 9.092522, respectively. Also, the mean value of LIDP is 18.73592, with a median value of 19.08763. It has a standard deviation statistic value of 1.151899. It has a range value of 19.84673 with maximum and minimum statistic values of 19.84673 and 15.33108, respectively. The mean value of LACGSF is 15.66987 with a median value of 15.87481. It has a standard deviation statistic value of 0.489125. It has a range value of 16.33773 with maximum and minimum statistic values of 16.33773 and 14.54968, respectively. Finally, the mean value of ABP is 3.26E+10, with a median value of 0.000000. It has a standard deviation statistic value of 4.55E+10. It has a range value of 9.24E+10 with maximum and minimum statistic values of 9.24E+10 and 0.0000000, respectively.

## 3.1 Model Specification

The model for the effect of CBN initiatives on the Agriculture sector (output) is expressed in a functional form:

*AGOPUT=f (IDF, ACGSF, ABP) ... (1)*

Where AGOPUT denotes Agricultural output, IDF is the Interest Drawback fund, ACGSF is the Agricultural Guarantee Scheme Fund and ABP denotes the Anchors Borrowers Program.

The model in a functional form is expressed in the econometrics model as:

$$AGOPUT = \alpha_0 + \alpha_1 LIDP + \alpha_2 LACGSF + \alpha_3 ABP + \mu \ ... \ (2)$$

Where $\alpha_0$ is the constant, $\alpha_1$ to $\alpha_3$ are the coefficients of the explanatory variables and $\mu$ is the error term. The a priori expectations are $\alpha1 > 0$ $\alpha2 < 0$ $\alpha3 > 0$

# 4. Results and Discussion

## 4.1 Unit root analysis

This research will be making use of the (ADF). If the absolute value of the ADF t-stat is greater than the absolute critical value of 10 percent the ADF t-stat is less than the absolute critical value, a variable is considered stationary. Therefore, the unit root test, tests for the stationarity in a times series. The ADF unit root test was used in this study to test the variables employed in the study for stationarity. The results are presented in Table 2. (See table in Appendix)

## 4.2 Analysis of Estimation.

The empirical result of the OLS estimates of the parameters of the model is presented in the equation below. The t-values are reported in parenthesis, directly under the coefficient of determination ($R^2$), the adjusted coefficient of determination ($R^{-2}$), the F-statistics, and Durbin-Watson (DW) statistics are also presented.

**Table 3**: Regression Results Using Ordinary Least Squares Approach (See table in Appendix)

From Table 3, the R-squared of 0.901648 indicates that 90.16% of changes in the agricultural output are explained by changes in the independent variables. The adjusted R-squared, after adjusting for the degree of freedom, the adjusted R-squared is 0.878951

## 4.3. Interpretation of Result

The probability value of the result at **a** 5% level of **significance** shows either the variables are significant or non-significant. The LACGSF has the probability value of 0.3466 making it 34.66% non-significant in impacting on the dependent variable. The coefficient of **the** Agricultural **Credit Guarantee Scheme Fund** (LACGSF) is -0.061193, **which** is 6.1193% highly insignificant making it statistically negative and non-significant. This means that the agricultural scheme fund has not impacted agricultural output. This further implies that the fund is not utilized by the beneficiaries in this sector.

Variables are integrated in different orders with the highest order of integration being order (I) and the lowest being order (0). From the result above, it is observed that LACGSF, LAGOPUT, LIDP, and ABP are integrated of the order I (0) which means that it is stationary at levels. The rule of thumbs for the unit root test is one that if the absolute value statistics is greater than the critical value 1%, 5%, and 10% we reject the null hypothesis that the variables are stationary, and if they are lower, we accept the null hypothesis.

i.e. 87.89% making it a good fit for the estimated model.

The F-statistic of 39.72596 is statistically significant at the 10% level suggesting the validity of the model estimated. It shows that all the independent variables together significantly and jointly impact the dependent variable. Prob(F-statistic) 0.000001 is significant at a 5% level of significance. Finally, the Durbin-Watson statistic which tests for autocorrelation i.e. all the independent variables are related is 1.754075 which indicates the absence of auto-correlation in the model. The test must be approximately 2 to show that there is no autocorrelation. Therefore, based on the highlighted diagnostics of the estimated model, the model estimated is good.

The ABP has the probability value of 0.0001 with 0.01% which makes it highly significant in impacting on the dependent variable as well as the LIDP has the probability value of 0.0003 making it 0.03% highly significant in impacting on the dependent variable. **The coefficient** of the Anchors Borrowers Program (ABP) is 2.84E-12, positive and statistically significant at 5%. The coefficient of the Interest Drawback program (LIDP) is 0.134229, resulting **in** a positive and statistically significant. This simply implies that these programs contribute to the output of **the** agricultural sector via its awareness.

## 4.4. Post Estimation Techniques
**Table 4: Breusch-Godfrey Serial Correlation LM Test (See Table in Appendix)**

The Prob. F and the Prob. Chi-Square shows that there is autocorrelation if it is less than the significant level of 5 percent but no autocorrelation if the Prob. F and the Prob. Chi-Square values are higher than 5 percent.

**Table 5: Heteroscedasticity Test: Breusch-Pagan-Godfrey (See Table in Appendix)**

In Table 4 above, the value of the Prob. F is 0.7606 which is above the significant level of 5%, which shows that there is no autocorrelation; this also explains the Prob. Chi-Square which has a value of 0.6619. The Prob. F and the Prob. Chi-Square shows that there is no autocorrelation and therefore supports the Durbin-Watson test.

Table 5 shows that the p-values are greater than the significant level of 5%, therefore there is an absence of heteroscedasticity.

## 5. Findings, Recommendations and Conclusion

The study investigated three CBN intervention programs (the interest drawback, the Agricultural credit guarantee scheme fund, and the Anchors Borrowers Program) and their impacts on the Agricultural sector covering the period of 30 years, between 1991-2020. The study findings indicate that there is a significant relationship between the interest drawback and the agricultural output in Nigeria. Secondly, there is a negative relationship between the ACGSF and the agricultural output in Nigeria and finally, there exists a positive relationship between the Anchors Borrowers Program and the agricultural output in Nigeria.

The study therefore recommends that banks should make use of agricultural credit and not another type of credit vehicle in promoting growth in the agricultural sector. Secondly, banks should ensure that loans are given for their specific agricultural purpose and not for other purposes and it must be ensured that individuals do not divert such funds. More so, policymakers should continue with the anchor borrowers' program and interest drawback program with a wider campaign strategy about ACGSF should be enforced by bank officials for farmers to benefit from. Finally, policymakers should kick off corruption thereby ensuring that the fund reaches the hands of the farmers and they are being used for its purpose.

The study concludes that finance and credit facilities provided by the CBN are important tools for the growth of the agricultural sector. Hence, such funds must be maximally utilized for the purpose which it is set out for, since the interest drawback and the Anchors Borrowers Program are positively related to agricultural output.

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## APPENDIX

### Table 1: Descriptive Statistics of tables

|  | LAGOPUT | LIDP | LACGSF | ABP |
|---|---|---|---|---|
| Mean | 9.523158 | 18.73592 | 15.66987 | 3.26E+10 |
| Median | 9.570090 | 9.570090 | 15.87481 | 0.000000 |
| Maximum | 9.817282 | 19.84673 | 16.33773 | 9.24E+10 |
| Minimum | 9.092522 | 15.33108 | 14.54968 | 0.000000 |
| Std deviation | 0.230183 | 1.151899 | 0.489125 | 4.55E+10 |
| Observation | 17 | 17 | 17 | 17 |

**Source: views 10.**

### Table 2  Augmented Dickey-Fuller Unit Root Test Results of Variables

| Variable | ADF Test Statistics | 10% critical value | Order of integration | Remarks |
|---|---|---|---|---|
| LACGSF | -4.71 | -2.63 | I(0) | Stationary |
| LAGOPUT | -4.89 | -2.63 | I(0) | Stationary |
| LIDP | -4.45 | -2.68 | I(0) | Stationary |
| ABP | -5.29 | -2.63 | I(0) | Stationary |

**Source: E-views 10. AUTHOR'S computation (2023)**

**Table 3 Regression Results Using Ordinary Least Squares Approach**

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|---|---|---|---|---|
| LIDP | 0.134229 | 0.027084 | 4.955949 | 0.0003 |
| LACGSF | -0.061193 | 0.062663 | -0.976541 | 0.3466 |
| ABP | 2.84E-12 | 5.29E-13 | 5.374886 | 0.0001 |
| C | 7.874330 | 0.697749 | 11.28533 | 0.0000 |

| | | | |
|---|---|---|---|
| R-squared | 0.901648 | Mean dependent var | 9.523158 |
| Adjusted R-squared | 0.878951 | S.D. dependent var | 0.230183 |
| S.E. of regression | 0.080085 | Akaike info criterion | -2.009121 |
| Sum squared resid | 0.083378 | Schwarz criterion | -1.813071 |
| Log-likelihood | 21.07753 | Hannan-Quinn criteria. | -1.989634 |
| F-statistic | 39.72596 | Durbin-Watson stat | 1.754075 |
| Prob(F-statistic) | 0.000001 | | |

Source: E views 10.

**Table 4: Breusch-Godfrey Serial Correlation LM Test**

| | | | |
|---|---|---|---|
| F-statistic | 0.280582 | Prob. F(2,11) | 0.7606 |
| Obs*R-squared | 0.825158 | Prob. Chi-Square (2) | 0.6619 |

**Table 5: Heteroscedasticity Test: Breusch-Pagan-Godfrey**

| | | | |
|---|---|---|---|
| F-statistic | 0.277713 | Prob. F (3,13) | 0.8405 |
| Obs*R-squared | 1.023872 | Prob. Chi-Square (3) | 0.7955 |
| Scaled explained SS | 0.363934 | Prob. Chi-Square (3) | 0.9476 |