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IMPACT OF AGRICULTURAL CREDIT GUARANTEE SCHEME FUND ON FISHERIES PRODUCTION IN NIGERIA, 1987 – 2021

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Abstract

The study investigates the impact of Agricultural Credit Guarantee Scheme Fund (ACGSF) on fisheries production in Nigeria from 1987 – 2021. Secondary data were sourced from the Central Bank of Nigeria (CBN) statistical bulletin. The Autoregressive Distributed Lag (ARDL) model approach to co-integration is employed for data analysis. The Augmented Dickey-Filler (ADF) test is used to test for stationarity of data. The results of the ADF (unit root) test reveals that data were stationary at first differencing at 5% level of significance except inflation which was stationary at level. The result of the F-bond test F-statistics to co-integration is 6.5221 which is higher than the upper bound value of 5.0300 at 5% level of significance. This implies that there is a long-run relationship between the variables. The ARDL result shows that the coefficient of the ACGSF credit to fisheries subsector is 0.6321 and is statistically significant. This means that a unit increases in ACGSF credit to fisheries subsector will lead to 0.63% increase in GDP for fisheries. Furthermore, a unit increases in ACGSF loan to livestock and food crop subsectors will increases fisheries production by 0.58% and 0.15% respectively while population will increases fisheries production by 0.09%.inflation is however negative but statistically significant. The study recommends that Agricultural Credit Guarantee Scheme Fund should set aside a higher percentage of its funds for financing the fisheries subsector in order to boost farmers' initiative and increases productivity.

Keywords: Agricultural Credit, Fisheries Production, Livestock, Food Crops.

1. Introduction

Fishery, as a subset of agriculture has continued to gain importance over the years as nations seek for development. This arises from the growing importance of fish as key nutritional component of food. Fish contains a large proportion of protein which is needed for body building and contributes immensely to nutrition and food security. Fishery comprises of fish capture and aquaculture or fish farming. It is an important source of income and contributes considerably not only to the growth of agricultural output but also to growth in the Gross Domestic Product (GDP).Furthermore, increasing productivity and efficiency in the fisheries sub-sector has the potential of keeping food prices low, affordable and also increasing the purchasing power especially among low income earners. Thus the development of the fisheries sector is critical to achieving food security. The FAO (2021) elaborately enunciated the growing importance of the fishery sub-sector in economic development when it noted that 120 million full-time and part-time workers are directly dependent on fisheries value chain for their livelihood; of these, 97percent live in developing countries and more than 90 percent work in

small scale fisheries; while world fish production stood at 171 million tonnes in 2016, of which aquaculture accounted for 47 percent.

In Nigeria, fish is an important component of households' diet and serves as a focal point for the family meal. In riverine communities, fishing is a predominant occupation which does not just provide food for family sustenance but also serves a sole source of income to fishermen. Also aquaculture and fish processing have gained significant attention as important sources of livelihood as well as emerging sources of GDP earning for the country.

Like other sub-sectors in the agricultural sector, the fisheries sub-sector is fraught with a myriad of challenges. Nazir, Chauchan, Khati and Arya (2018) maintain that the major problem of fisheries is inadequate credit. They noted that fishermen have limited access to both formal and informal credit due to: lack of viable assets to present as collateral, lack of expertise in technology, lack of functional organization, membership of cooperative and lack of good credit history. Nazir et al(2018) stress that aquaculture businesses have limited access to credit due to non-profitable aquaculture projects and the risks associated with aquaculture such as unfavourable weather, business and financial risks as well as market risks.

In Nigeria, fish consumption is very high and the supply of fish and fish products largely falls short of the demand. Oparinde, Amos and Adeseluka (2017) noted that the fish supply deficit in Nigeria is about one million tons annually. This shortage arises from the fact that domestic output of fish stands at 0.62 million metric tons while demand stands at 2.66 metric tons. Oparinde et al (2017) maintain that poor access to credit is a militating factor in bridging the gap between the demand and supply of fish in Nigeria.

In order to facilitate better access to agricultural credit, the Federal Government of Nigeria established the Agricultural Credit Guarantee Scheme Fund in 1977. The objective of the fund is to boost bank credit to the agricultural sector through credit provision of guarantee with respect to loans given by any bank for agricultural purposes. Loan guarantee by ACGSF covers: production of food crops, cash crops, animal husbandry, and fishery, processing of agricultural output and the establishment and management of plantations. The day-to-day operation of the ACGSF is overseen by the Central Bank of Nigeria through its agricultural finance department while credit is administered to farmers through CBN branch offices. Loan administration procedure includes loan application, application of guarantee, loan recovery and enforcement of guarantee claims. Loan duration can be short-term, medium term or long term depending on the agricultural activity for which the loan is given.

Evidence from literature for instance, Jaabi and Esenmu (2014), shows that credit is needed in order to enable farmers finance agricultural enterprise, acquire new machines that lead to increase in output and also meet the financial need of farmers during off farm seasons. Hence the need for increased credit to the fishery sub-sector cannot be over stated. It is in the light of this fact that this study aims at investigating the impact of Agricultural Credit Guarantee Scheme Fund on fishery production in Nigeria. The study is structured into five sections: the introduction, the literature review, methodology, data presentation and analysis and conclusion and recommendation.

2. Literature Review

2.1 Conceptual Review

IGI (Idea Group Inc) Global (2009) defines fisheries as the science of producing fish and other aquatic resources for the purpose of providing human food, although other aims are possible. This definition goes on to stress that fisheries refer to the activity of catching fish and other living organisms from the wild aiming to be consumed as sea food, for their commercial value or for recreational purposes.

Food and Agriculture Organization, FAO (2014) defines fishery as an activity leading to harvesting of fish which may involve capture of wild fish or rising of fish through aquaculture.

Fisheries comprises of fishing from natural waters and aquaculture or fish farming. Capture fish comprises of fish caught from rivers, oceans, lakes, reservoirs, dams and oceans. Fish rearing includes fish farming in tanks, reservoirs and ponds. Fish capture and aquaculture is an important part of livelihood of a considerable proportion of the population in developing countries. FAO (2021) noted that over 90% of small scale

fishers and aquaculture farmers live in developing countries and are often dependent on the sector for their livelihood. FAO estimates that these small scale fishers and aquaculture farmers contribute 85% to total capture fisheries production globally. However, these small scale fish farmers have limited access to capital needed to enhance their productivity. Hence, external financial intervention in form of credit is often needed.

Conceptually, Passi (2017) defines credit as that instrument which facilitates business. Implicitly, Passi perceives credit as not just limited to money but includes valuable assets which are useful in facilitating business. The author asserts that credit provides money for large scale production, increases profit rate, provides resources for increased consumption and enables firms or business men to acquire a strong resource base, while providing working capital. According to Dalio (2015), credit is the transaction between lender and borrower in which the borrower promises to pay back with interest in future. Dalio enumerates that credit leads to increase in spending, increase in income levels in the economy which in turn leads to increase in Gross Domestic Product (GDP).Thus, if credit is used to purchase productive resources; it leads to increase in income and brings about economic growth. Hence access to credit is a strong determinant of level of output and income among farmers in general and fish farmers in particular.

Jaabi and Esemu (2014) opine that greater public support is required for small scale fish enterprises in order to enhance their capabilities and ease their financial access to productive resources. On their own part, small scale fishers require credit to finance operations which include acquisition of boats, gear and ice for river capture; and digging and maintenance of fish ponds, purchase of plastic tubs, fingerlings and other inputs for aquaculture farmers. FAO (2021) observed that majority of small scale fishers and aquaculture farmers are unable to provide collateral as such cannot access credit from formal financial institutions. The direct repercussion is that fishers and their families experience declining productivity and incomes, increasing job as well as food insecurity, increasing vulnerability to economic shocks and social displacement as they may migrate to urban areas in search of greener pastures. Chandio (2018) noted that lack of credit and finance is one of the main causes of poor agricultural productivity in most developing countries.

2.2 Theoretical Review

Wiggins (2006) proposed the agricultural based development hypothesis. The theory stresses that agriculture requires an institutional, technical and financial incentive change that will boost the productivity of small farmers. The theory emphasizes that agricultural financial schemes play a dual role in the bid for economic development. These roles include provision of increased purchasing power and provision of input to sustain industrial transformation. Wiggins therefore presupposes that institutional credit provides the bedrock for a solid agricultural development and economic development in general.

Chamber and Cornway (1991) proposed the sustainable livelihood theory. The theory holds that output can only be increased if secured ownership or access to capital resources is ensured. These resources include reserves and assets needed to offset risks, ease stocks, meet unforeseen needs as well as enhance and maintain productive resources on a long term basis. Thus increased agricultural output ensures food availability, food affordability and also creates the ability for farmers to earn income on a long term basis.

2.3 Empirical Review

Iroegbu, Okidim and Ekine (2021) investigate the impact of bank loan on artisanal fishing in Rivers State; using Bank of Agriculture as case study. Purposive random sampling technique is used to select 60 loan beneficiaries and 40 non-beneficiaries of Bank of Agriculture loan. Descriptive and inferential statistics is used to analyse data. Results reveal that there is a significant improvement in the income of fishers who are Bank of Agriculture loan beneficiaries because loan was used to purchase fishing inputs such as gears and financing fishing operations. This gave rise to increase in output.

Olabisi, Fayemi, Ojo, Oluwasola and Ngidi (2021) investigate the determinants of institutional credit rationing impact on the net farm income of catfish processors in Nigeria. Primary data was collected using cross-sectional survey method and endogeneous switch regression model is used to test the effect of credit rationing on net farm income of catfish processors. A

multi-stage sampling procedure is used to elicit information from fish processors and agricultural lending institutions. The ESRM procedure consisted of two parts: first part used the Probitmodel to correct for endogeneity which is common with the type of data collected for the study and the second part of the model focused on the influence of credit rationing on the net farm income. The result of the ESRM shows a negative and significant effect of credit rationing on net farm income of fish farmers. More specifically, the income of farmers who have additional experience in fishing and are not credit constrained increases by 8.7 percent while that of farmers who are credit constrained increases by 7 percent. Similarly, a unit expansion in farm size increases income of credit rationed and non-credit rationed borrowers by 14.3 percent and 19.2 percent respectively. Finally a 1 percent increase in credit rationing will impair farmer's income by 11 percent.

Otubu (2020) investigated bank credits and yield of fisheries production in Nigeria. Secondary data from the Central Bank of Nigeria is utilized and the Augmented Dickey Fuller E-test is used to test for stationarity of data. Other econometric methods used include the error correction model, granger tests and ordinary least square regression model to establish the relationship between the dependent and independent variables. Results reveal R^2 of 0.97 which implies the 97% changes in fisheries production (dependent variables) are explained by changes in the independent variable (Bank credits). The t-statistic is (2.091423), is positive and statistically significant at 5% level. This implies that increase in bank credits to agriculture will increase fisheries production output in Nigeria.

Twumasi, Jiang, Danquah, Chandio and Asiqmah (2020) study the determinants constraints of artisanal fishermen in the Western and Central regions of Ghana using multi-stage sampling procedure. Data were analysed using descriptive statistics and IV-Probit model. Findings reveal that out of the 400 fishermen interviewed, 341 (85.2 percent) applied for credit. Out of this number, 132 (38.7 percent) were credit constrained, while 209 (61.2 percent) were credit unconstrained. The IV-Probit regression result reveals a log-likelihood value of -2657.8243. Hence the entire models were significant at 1 percent. Fishermen fishing income was significant at 1 percent with a negative coefficient and a marginal effect of 0.145. This implies that fishermen who engaged in off-fishing activities are less likely to be credit-constrained. Furthermore, procedure in securing loan was positively significant at 5 percent. The implication of this financing is that, the more cumbersome the procedure for securing loan becomes, the more the probability of being credit constrained. Finally, boat ownership was significant at 5 percent while disbursement time lag was significant with a positive coefficient. Two things stand out from this study; first, the study points out that if farmers have alternative source of income, they will likely not rely on institutional credits. This is due to the fact that adequate income will provide farmers opportunity to save and hence be able to raise capital for investment. Second, cumbersome application and disbursement procedures discourage farmers from applying for loans. This is not farfetched from the fact that most small scale farmers are not educated and may find the paper work associated with applying for loans.

Okechukwu, George, Egor and Eluwa (2019) analyse the effect of fishery agricultural loans and insurance premium on the economic growth of fishery production in Nigeria. Secondary data was obtained from Nigerian Agricultural Insurance Corporation and Central Bank of Nigeria. Primary data is also sourced using structured questionnaires and interviews. Data is analysed using descriptive statistics, graphs, ordinary least squares, panel unit root analysis, one sample t-test and co-integration. Regression models were used to establish the relationship between the variables. Findings reveal that agricultural loans on fishery have a significant and positive effect on fishery production with a coefficient of value of 0.753036. It was also found that insurance premium on fishery has a positive and significant effect on fishery production with a coefficient value of 0.939288.

Oparinde, Amos and Adeseluka (2017) study the influence of Agricultural Credit Guarantee Scheme Fund (ACGSF) on fishery production in Nigeria. Annual Time Series data for the period 1981 – 2012 were collected using descriptive statistics, growth function and Autoregressive Distributed Lag model (ARDL). Results reveal that between 1981 and 2012, GDP from fishery had a positive growth rate of 10.63 percent while the

contribution of fishery to agricultural GDP was 0.005 percent. The ARDL long-run analysis reveals that ACGSF loan on fishery had a negative but significant influence on GDP.

Orok and Ayim (2017) study the impact of agricultural credit guarantee scheme fund on agricultural sector development in Nigeria. Secondary data were sourced from Central Bank of Nigeria publications and statistical bulletin. The multiple linear regression model was adopted to establish the relationship between the dependable and independent variables. Findings reveal a positive and significant relationship between ACGSF and the crops, livestock and fishery sub-sectors evaluated by sustained rise in their contribution to GDP. The study also found that ACGSF had given more funds to the crop subsectors. Although, Oroko and Ayim were able to establish the relationship between credit and output, they did not take into account the influence of time as long-run and short-run effect of credit on output were not analysed. Also the OLS methodology used does not provide the consistent estimate of the long-run estimation of the coefficients if they are of different orders of integration, a characteristic which is common with time series data.

From the studies reviewed so far, it has been established that credit has a positive impact on agricultural output in general and fishery production in particular. All the studies attest to the fact that fishers and farmers need credit to be able to adopt new techniques of production and finance enterprise operations. Oparinde, et al specifically noted that credit guaranteed to the fisheries sector is minimal compared to credit advanced to the other subsectors. This study adopts the model of Oparinde, Amos and Adeseluka (2017).However while Oparinde et al examine the influence of ACGSF loan to fishery, agriculture as well as volume of loan to agriculture and fishery on GDP from fishery subsector, this study isolates the impact of ACGSF loan to fishery subsector, food subsector, livestock as much as influence of inflation and population on fishery production.

3. Methodology

The study employed the technique of Autoregressive distributed Lag (ARDL) model approach to co-integration. The ARDL model was first developed by Pesaran and Shin (1999). ARDL provides consistent estimate of the long run coefficient that are asymptotically normal irrespective of whether the underlying regression are purely 1(0), 1(1) or mutually, integrated. But if the series are integrated in the order of 1(2) it provide spurious regression. A spurious regression occurs when a pair of independent series, but with strong temporal properties, is found apparently to be related according to standard inference in a Least Squares regression. Therefore, the study starts the modeling techniques with Unit root test to ascertain the level of the stationary of the series. The study employed Dicker Fuller (1981) technique for achieving the underlying order of the series.

3.1 Model Specification

The study uses six variables: Fisheries production in Nigeria over the period of 1987 – 2021, (Dependent variable), ACGSF loan to fisheries subsector, ACGSF loan to food crop subsector, ACGSF loan to livestock subsector, population and inflation (Independent variables). The study follows the work of Oparinde; Amos and Adeseluka (2017). Their model is stated as follows:

$$GDPF = f(VLF, NLF, VLA, NLA)\ldots\ldots\ldots\ldots..1$$

Where:

GDP = Gross Domestic Product for fisheries.

VLF = Volume of ACGSF loan to fishery subsector.

VLA = Volume of ACGSF loan to Agriculture.

NLA = Number of ACGSF loan to Agriculture.

NLF = Number of ACGSF loan to Fisheries.

This study expresses the relationship $_{\text{between}}$ fisheries production and ACGSF loan to fisheries as follows:

$$GDPF = f\ (ACGF_{FSS}, ACGF_{LFC}, ACGF_{LL}, INF, PPL)\ldots1$$

The econometric specification for above functional relation is presented as:

$$GDPF = \alpha_0 + \alpha_1 ACGF_{FSS} + \alpha_2 ACGF_{LFC} + \alpha_3 ACGF_{LL} + \alpha_4 INF + \alpha_5 PPL + \mu_1 \ldots\ldots\ldots 2$$

Where:

GDPF = Gross domestic product for Fishery sub-sector as the dependent variable,

$ACGF_{FSS}$ = Agricultural credit guarantee fund to fisheries sub-sector,

$ACGF_{LFC}$= Agricultural credit guarantee fund loan to food crop

$ACGF_{LL}$ = Agricultural credit guarantee fund loan to livestock

INF = Inflation rate

PPL = Population,

α= Intercept,

α_1- α_5= coefficient of variables,

μ_1= stochastic error term.

The a priori expectation of Agricultural Credit Guarantee Scheme Fund is positive, ACGSF credit to food crop sector is positive, ACGSF to livestock is positive, population is positive while inflation is negative.

3.2 Method and Sources of Data Collection

The study used secondary data sourced from Central Bank of Nigeria statistical bulletin (2021) spanning the period 1987-2021. These include data for ACGSF loan to fisheries, food crops, and livestock; GDP from fishery subsector, inflation rate and population.

3.3 Techniques of Data Analysis

The study employed Autoregressive Distributed Lag (ARDL) techniques for the estimation of equation (2). Stationary tests were also conducted to test for its stochastic properties through unit root tests in order to avoid spurious results (Orok & Ayim, 2017). Therefore, the general ARDL model is specified as;

$$\Delta \ln(\mathrm{GDPF})_t = \partial_0 + \partial_1 L(\mathrm{ACGFFSS})_{t-1} + \partial_2 L(\mathrm{ACGFLFC})_{t-1} + \partial_3 L(\mathrm{ACGFLL})_{t-1} + \partial_4 L(\mathrm{INF})_{t-1} + \partial_5 \mathrm{L(PPL)}_{t-1} + \sum_{i=1}^{n} \beta_1 \Delta \mathrm{L(ACGFFSS)}_{t-i} + \sum_{i=1}^{n} \beta_2 \Delta \mathrm{L(ACGFLFC)}_{t-i} + \sum_{i=1}^{n} \beta_3 \Delta \mathrm{L(ACGFLL)}_{t-i} + \sum_{i=1}^{n} \beta_4 \Delta \mathrm{L(INF)}_{t-i} + \sum_{i=0}^{h} \beta_5 \Delta \mathrm{L(PPL)}_{t-i} + e_t \dots\dots\dots\dots\dots\dots (3)$$

Since long run relationship is established among the variables, a long-run model is estimated thus:

$$\mathrm{L(GDPF)}_t = \partial_0 + \sum_{i=0}^{b} \beta_1 \mathrm{L(ACGFFSS)}_{t-i} + \sum_{i=0}^{b} \beta_2 \mathrm{L(ACGFLFC)}_{t-i} + \sum_{i=0}^{b} \beta_3 \mathrm{L(ACGFLL)}_{t-i} + \sum_{i=0}^{b} \beta_4 \mathrm{L(INF)}_{t-i} + \sum_{i=0}^{b} \beta_5 \mathrm{L(PPL)}_{t-i} + e_t \dots\dots\dots\dots (4)$$

In order to get the short-run coefficients, an Error Correction Model (ECM) is estimated. The ARDL specification of the ECM is represented as;

$$= \partial_0 + \sum_{i=0}^{h} \beta_2 \Delta \mathrm{L(ACGFFSS)}_{t-i} + \sum_{i=0}^{h} \beta_3 \Delta \mathrm{L(ACGFLFC)}_{t-i} + \sum_{i=0}^{h} \beta_4 \Delta \mathrm{L(ACGFLL)}_{t-i} + \sum_{i=0}^{h} \beta_5 \Delta \mathrm{L(INF)}_{t-i} + \sum_{i=0}^{j} \beta_6 \Delta \mathrm{L(PPL)}_{t-i} + e_t \dots\dots\dots\dots\dots\dots (5)$$

4. Data Presentation and Discussion of Results

4.1 Unit Root Test for Stationarity

Table 1:
Unit Root Test Result

VARIABLES	ADF TEST		PP TEST		ORDER OF INTEGRATION
	@LEVELS	@1ST DIFF	@LEVELS	@1ST DIFF	
GDPF	0.596(0.889)	-4.163(0.042)	0.641(0.988)	-1.680(0.037)	I(1)
$ACGF_{FSS}$	0.415(0.798)	-1.142(0.274)	-1.635(0.462)	-6.265(0.000)	I(1)
$ACGF_{LFC}$	0.324(0.802)	-3.586(0.000)	-2.264(0.189)	-6.721(0.000)	I(1)
$ACGF_{LL}$	1.116(1.895)	-3.164(0.007)	1.209(1.998)	-2.720(0.007)	I(1)
INF	-4.362(1.472)	-6.422(0.005)	-3.728(1.998)	-8.98(0.004)	I(0)
PPL	-0.317(0.637)	-5.10(0.000)	0.344(0.352)	-3.482(0.000)	I(1)

Source: Author's Computation Using E-views 10

Table 1 presents the results of Both the ADF test and the PP test for GDPF, $ACGF_{FSS}$, $ACGF_{LFC}$, $ACGF_{LL}$, INF and PPL indicate that the series is non-stationary in levels except for INF which is stationary in level. However, the first differences of the series are stationary as per both tests for all the variables except inflation (INF). Hence, the variables GDPF, ACGFFSS, ACGFLFC, ACGFLL, and PPL are integrated of order one I(1) and INF is integrated of order one I(0) .

4.2 Test for Co-integration

The existence of long-run co-integration relationship for Agricultural Credit Guarantee Scheme Fund (ACGSF) and fisheries production is investigated by computing F statistics. For the estimation the maximum lag order for various variable in the model is set at four (m=4) and the estimation is carried out for the period 1987 to 2021.

Table 2:
Testing for existence of a level relationship among the variables in the model

F-statistic	95% Lower Bound	95% Upper Bound	90% Lower Bound	90% Upper Bound
6.5221	3.6214	5.0300	3.1832	4.1468

Source: Author's Computation Using E-views 10

The result of the bound test shows that the value of F statistic is 6.5221, since the value is higher than the upper bound I(1) at 5% level of significance which is 5.0300, the null hypothesis of no co-integration is rejected, this means that there is long run relationship between gross domestic product for fisheries sub-sector and $ACGF_{FSS}$, $ACGF_{LFC}$, $ACGF_{LL}$, INF and PPL (explanatory variables).

4.3 Autoregressive Distributed Lag (ARDL) Results and Analysis

Table 3:

Estimated Long-run Coefficients of ARDL

Regressor	Coefficient	Standard Error	T-Ratio[Prob]
$ACGF_{FSS}$	0.6321	0.31538	-3.4327[0.011]
$ACGF_{LFC}$	0.1484	0.52673	-5.1435[0.001]
$ACGF_{LL}$	0.5839	1.06322	-2.8498[0.023]
INF	-0.3370	0.41854	-6.9525[0.000]
PPL	0.0948	0.12239	1.1532[0.825]
C = 1.462	R^2 = 0.734	R^{-2} =0.692	

Source: Author's Computation Using E-views 10

The estimated coefficient of the long run relationship is significant for all the variables except for coefficient of population (PPL) as their probability values are less than 0.05. The estimated coefficients are positive for $ACGF_{FSS}$,$ACGF_{LFC}$, $ACGF_{LL}$ and PPL. This indicates that one percent increase in $ACGF_{FSS}$,$ACGF_{LFC}$, $ACGF_{LL}$ and PPL would increase GDPF by 0.63%, 0.15%, 0.58% and 0.09% respectively. It is a clear indication that the variables have a positive relationship with GDPF. By implication, an increase in ACGSF loan to fisheries will increase fisheries output by 0.63%. This is because such increase in credit will afford fish farmers' resources to acquire more input. Also the 0.15% and 0.58% increase in fisheries GDP resulting from increasing credit to food crop and livestock is evident from the fact that fisheries is a subsector of agriculture and is bound to benefit from improvement in the agricultural sector. Moreover, fisheries feeds are derived from byproduct of livestock and food crop subsectors. The coefficient of inflation rate (INF) is negative. This means that inflation rate (INF) has negative but significant relationship with GDPF. An increase in inflation rate (INF) by 1% will reduce GDPF by 0.34%.This suggests that inflation rate should be monitor as any increase will affect fish production output in Nigeria.

Table 4:
Estimated Short-run Coefficients of ARDL

Regressor	Coefficient	Standard Error	T-Ratio[Prob]
dGDPF1	0.4092	0.15772	-3.8854[0.004]
dGDPF2	-0.2156	0.20831	-2.253[0.006]
$dACGF_{FSS}1$	0.4721	0.2734	3.526[0.016]
$dACGF_{FSS}2$	0.3147	0.8201	3.527[0.011]
$dACGF_{LFC}1$	0.0526	0.1050	1.573[0.216]
$dACGF_{LFC}2$	0.9543	0.9335	-5.4137[0.002]
$dACGF_{LL}1$	-0.0152	0.0688	-1.5845[0.231]
$dACGF_{LL}2$	0.2569	0.0925	-2.2673[0.021]
dINF1	-0.0028	0.00299	0.9379[0.362]
dINF2	-0.3162	0.37748	1.2639[0.735]
dPPL1	0.1552	0.63256	-4.2568[0.001]
dPPL2	-0.8367	0.2525	-2.7369[0.031[
ecm(-1)	-0.4925	0.018356	-4.2951[0.003]
R-Squared	0.76265	R-Bar-Squared	0 .70132
DW-statistic	2.217		

Source: Author's Computation Using E-views 10

The estimations for the short-run coefficients of ARDL show that the coefficients of all the regressors are statistically significant at 5% level as indicated by both the t-ratio and the probability values except for inflation rate (INF) which is not statistically significant. As expected, the ecm term is negative and significant. The coefficient of Error Correction Model (ECM) is equal to -0.4925 meaning that every year 49% of the divergence between the short run GDPF and long run path is eliminated. The results also indicated that the overall performance of the model is well fitted as the explanatory variables explained over 76% (R-Squared) change in the dependent variables. The R^2 value dropped to about 70.1% after adjusting for degree of freedom, however it is still significant. Durbin-Watson (DW) statistics of 2.217≈ 2.0 showed the absence of serial correlation meaning that there is independence of observation in the error term.

5. Conclusion and Recommendations

The study analyzed the impact of Agricultural Credit Guarantee Scheme Fund on fisheries production in Nigeria spanning the period 1987-2021. The study test for stationarity of the data and both the ADF test and the PP test for GDPF, $ACGF_{FSS}$, $ACGF_{LFC}$, $ACGF_{LL}$, INF and

PPL indicate that the series is non-stationary in levels except for INF which is stationary in level. The bound test of co-integration shows long run relationship between gross domestic product for fisheries sub-sector and $ACGF_{FSS}$, $ACGF_{LFC}$, $ACGF_{LL}$, INF and PPL.

The study concludes that $ACGF_{FSS}$,$ACGF_{LFC}$, $ACGF_{LL}$ and PPL have positive impact on the Gross Domestic Product for fisheries sub-sector in Nigeria during the period under study while inflation rate (INF) has negative relationship with Gross Domestic Product for fisheries sub-sector but statistically significant. The study therefore recommends that Agricultural Credit Guarantee Scheme Fund should set aside higher percentage of the fund to fishing sub-sector. This will largely boost farmer's initiative and drive for increased productivity as well as provide employment, increase food security an improvement in welfare and nutrition of the population.

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