



# Performance of Agricultural Loan Scheme among Small Farmers in Anambra State, Nigeria

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## Abstract

The need to assess the performance of Anambra State Agricultural loan scheme, ensure proper utilization and repayment of the loans, and better life for the farmers necessitated this study. The study assessed the amounts of loan applications, approvals, disbursements and repayments; influence of socio-economic characteristics of the beneficiaries on loan repayment and constraints to implementation of the scheme. Multistage, purposive and random sampling techniques were used to select 226 respondents. Primary and secondary data were collected for the study. Data analyses were actualized using descriptive and multivariate statistics. Findings indicated that male farmers got higher amounts of approvals and disbursements, but made lower repayments than the females. About ₦100,000 and ₦250,000 were minimum and maximum amounts disbursed to the crop farmers respectively. Farm size, annual farm income and age significantly influenced loan repayment while gender, education, marital status, farming experience and household size did not. The regulatory body (Central Bank of Nigeria) should encourage simplification of the procedures for obtaining loans and adoption of group lending policy by the Bank of Agriculture while government should engage more extension agents in order to mitigate the identified constraints to scheme implementation, ensure higher repayment rates and programme sustainability.

**Keywords:** Loan scheme, Crop farmers, Repayment, Sustainability, Anambra State Nigeria.

## INTRODUCTION

The issue of hunger/poverty is a common element, especially within the sub-Sahara African countries. Several governments all over Africa have also declared their intention to tackle this problem through different declarations and efforts. Nigeria as a signatory to the United Nations conventions has embarked on several policies to assist farmers increase total agricultural output, earn foreign exchange and generate employment for the sustenance of the increasing population (Amakom, 2015).

About 69% of Nigeria's population is under nourished (United Nations Development Programme (UNDP), 2008) and depends largely on food imports to satisfy the requirements of the population. Nigeria has experienced some disasters which consequently have impaired the performance of the agricultural sector over the years and the availability of enough food to feed the populace, hence the continuous increase in food imports and depletion of foreign exchange earnings (Okunneye, 2002). For instance, \$1.23 billion was spent on food imports in the 3rd quarter of the fiscal year 2010 with \$1 billion alone spent on rice (Central Bank of Nigeria (CBN), 2010). This could either have been ploughed into assisting the farmers to increase local production or used to rehabilitate decaying infrastructure of agricultural production through policies and programmes aimed at revamping the agricultural sector in attempt to encourage increased food production.

Some of these programmes include: Agricultural Development Programme (ADP) 1975, National Accelerated Food

Production Programme (NAFPP) 1993, Operation Feed the Nation (OFN) Programme 1976; Green Revolution Programme (GRP) 1979-1983; National Fadama Programme 1996; as well as other various Presidential initiatives on crop, livestock and fisheries production. Most of these programmes failed the country's quest of attaining food sufficiency, because little or no meaningful attempt were made to change the underdeveloped status of the rural dwellers notwithstanding that these people constitute over 70% of the total population engaged in agriculture in Nigeria (National Bureau of Statistics (NBS), 2006). The inability of successive administration to achieve increased food production and self-sufficiency is also attributed to inadequate funding of agricultural projects and programmes, thus leading to low productivity of actors in the sector and declining supply of products.

Notwithstanding the limitations of informal finance, many governments have attempted in the past to develop alternative financial institutions to provide credit to farmers and other micro enterprises. Many of such attempts have failed not only in delivering such credits to target groups but also in promoting a viable credit delivery system as a result of government imprudent interference in credit markets, inability of the subsidy to get to the target people and wrong routing of the subsidized credit (Seibel, 2004).

Based on this backdrop, the importance of credit in agriculture is very crucial given that majority of the poor in developing countries are farmers. In Nigeria, the rural communities constitute more than half of the population. Attempt at constructing a development framework has made governments and the private sector committing huge sums of money into financing the activities of farmers through different microcredit schemes. Also, both formal and informal lenders are becoming more active in the rural credit market (Udry, 2003). Credit plays a crucial role in development as it among other things capitalizes farmers and entrepreneurs to undertake new investments or adopt new technologies. It also helps farmers through the provision of working capital thereby reducing poverty in the process. If agricultural credit schemes are to be supported, policy makers must know how much they are to subsidize, who receives the subsidy, and whether it helps the borrowers. Finance has been one of the most significant problems in the expansion of agricultural production. This is as a result of the neglect of the agricultural sector following the oil boom of 1970s, when the oil sector became a major aspect of the Nigerian's foreign exchange earnings. This development contributed to inadequate funding of the agricultural sector unlike before the boom.

As a result of this development, successive Nigerian governments have shown concern over the declining productivity in the sector and designed measures to mitigate the situation. Evidence have shown that despite the various policies and programmes mapped out annually for the economic development of Nigeria with emphasis on increased funding of the agricultural sector, the agricultural production level remained very low across the States of the country including Anambra State. Thus the need for this study which sought to establish the amounts of applications, disbursements, utilizations and repayments; determine the influence of socioeconomic factors of the crop farmers' beneficiaries on loan repayment; and identify constraints to implementation of the scheme.

## **METHODOLOGY**

The study area was Anambra State. The State occupies an area of 4.887km<sup>2</sup> with estimated population of over 4million (National Population Commission (NPC), 2006) which makes it one the most populous states in Southeast Nigeria. It has 21 Local Government Areas (LGAs), four Agricultural zones and 177 autonomous town communities. It is located at longitude 7°00'00"East and latitude of 6°20'00" North. Major economic activities in the State are farming, fishing, petty trading and construction.

All farmers who have benefitted from the loan scheme through the Bank of Agriculture (B.O.A) constituted the study's population. Multistage, purpose and random sampling techniques were used to select the respondents. Stage one involved purposive selection of Awka and Anambra agricultural zones. This was because Awka agricultural zone houses the headquarters of B.O.A while Anambra zone has the largest area of suitable land for agricultural activities. Simple random sampling method was deployed at stages II and III to select two co-operative societies from each of the nine constituent L.G.As in the selected zones, 12 (7males and 5females) crop farmers from each of the selected societies to arrive at 18 societies and 216 crop farmers. In addition, 10 staff of the B. O. A were randomly selected for information on loan administration, thus given a grand total of 226 respondents for the study.

A set of structured, pre-tested questionnaires were administered to the respondents through trained enumerators for data collection. Data were collected on socio-economic characteristics of the respondents; loan applications, approvals, disbursements and repayments, and constraints encountered in credit transactions. Secondary data from records of the Ministry of Agriculture and B.O.A were used to complement primary data. Data analyses were done using non-inferential statistics such as means, frequencies and percentages while ordinary least squares (O.L.S) regression assisted to ascertain the determinants of loan repayment of beneficiaries in the area.

The multiple regression model employed to determine the effect of socio-economic factors of the crop farmer beneficiaries on loan repayment is implicitly defined as:

$$\text{LRP} = f(\text{AGE} + \text{GEN} + \text{EDU} + \text{MTS} + \text{FAS} + \text{FAE} + \text{HHS} + \text{AFI} + e)$$

Where:

LRP = Loan repayment (₦)

AGE = Farmer's age (years)

GEN = Gender (dummy; male = 1, female = 2)

EDU = Educational attainment (years)

MTS= Marital status (dummy; male = 2, female = 2)

FAS = Farm size (hectare)

FAE = Farming experience (years)

HHS = Household size (number of persons in the household)

AFI = Annual farm income of farmer (₦)

e = Stochastic error term.

The regression model was fitted with the data and tried in four functional forms (linear, exponential, semi-log, and double-log) and output of the form with the best result in terms of econometric criteria was chosen as the lead equation. The explicit versions of the functional forms are given as:

Linear:  $\text{LRP} = a_0 + a_1\text{AGE} + a_2\text{GEN} + a_3\text{EDU} + a_4\text{MTS} + a_5\text{FAS} + a_6\text{FAE} + a_7\text{HHS} + a_8\text{AFI} + e_i$

Exponential:  $\ln\text{LRP} = a_0 + a_1\text{AGE} + a_2\text{GEN} + a_3\text{EDU} + a_4\text{MTS} + a_5\text{FAS} + a_6\text{FAE} + a_7\text{HHS} + a_8\text{AFI} + e_i$

Semi-log:  $\text{LRP} = a_0 + a_1\ln\text{AGE} + a_2\ln\text{EDU} + a_3\ln\text{FAE} + a_4\ln\text{GEN} + a_5\ln\text{FAS} + a_6\ln\text{HHS} + a_7\ln\text{EXS} + e_i$

Double-log:  $\ln\text{LRP} = a_0 + a_1\ln\text{AGE} + a_2\ln\text{EDU} + a_3\ln\text{FAE} + a_4\ln\text{GEN} + a_5\ln\text{FAS} + a_6\ln\text{HHS} + a_7\ln\text{EXS} + e_i$

## RESULTS AND DISCUSSION

### Loan applications

Analysis of amounts of credit applied for by the crop farmers is shown in Table 1. Result indicated that majority (68.82%) of the farmers applied for amounts greater than ₦250,000. More males (34.93%) than females (19.64%) applied for this amount (₦250,000) which incidentally was the minimum value of all the applications. Maximum application for males was ₦960,000 while that of females was ₦600,000. This result compares favourably with Okoh, Ugwumba and Isitor (2009) which reported that male small scale enterprises developers applied for higher amounts of microfinance loans than their female counterparts.

**Table 1.** Distribution of respondents according to loan applications

Loan Applications	Male and Female		Male		Female	
	Frequency	%	Frequency	%	Frequency	%
250,000 and Below	63	31.18	51	34.93	11	19.64
251,000 - 500,000	58	28.71	37	25.34	22	39.28
501,000 – 650,000	42	20.79	29	19.86	13	23.21
651,000 – 750,000	33	16.33	23	15.75	10	17.85
1,000,000 And Above	6	2.97	6	4.10	-	-
Total	202	100	146	100	56	100
Minimum	250,000		250,000		250,000	

Source: B.O.A., 2016. Note: F= Frequency, % = Percentage.

### Loan Approvals

In terms of loan approvals, the result (Table 2) showed that none of the crop farmers got what he/she applied for, rather less amounts were approved for all farmers irrespective of the gender. The farmers who applied for ₦250,000 and below got approval for ₦100,000 (4.76% of males and 7.14% of females). Crop farmers who applied for amount ₦251,000 - ₦500,000 got approval of ₦150,000 (20.54% of males and 19.64% of females). Farmers that applied for amount

**Table 2: Distribution of respondents according to loan approvals**

Amount approvals	Male and Female		Male		Female	
	Freq	%	Freq	%	Freq	%
100,000	11	5.44	7	4.79	4	7.14
150,000	41	20.29	30	20.54	11	19.64
200,000	60	29.70	40	27.39	20	35.71
250,000	90	44.50	69	47.26	21	37.50
Total	202	100	146	100	56	100
Minimum	100,000		100,000		100,000	
Maximum	250,000		250,000		250,000	

Source: B.O.A., 2016. Note: F= Frequency, % = Percentage.

**Table 3: Distribution of respondents according to loan repayments**

Repayments	Male and Female		Male		Female	
	Frequency	%	Frequency	%	Frequency	%
100,000	11	5.44	77	4.79	4	47.1
150,000	41	20.29	30	20.54	11	19.64
200,000	50	24.75	35	23.97	15	26.78
250,000	75	37.12	55	37.67	20	35.71
Total	177	87.62	1	86.97	50	89.27
Minimum	100,000		100,000		100,000	
Maximum	250,000		250,000		250,000	

Source: B.O.A., 2016. Note: F= frequency, % = percentage.

between ₦501,000 – ₦650,000 received approval for ₦200,000 (27.39% of males and 35.71% of females). Maximum amount approved for any of the crop farmers (ie either male or female) was ₦250,000 while the minimum approval was ₦100,000. Chiekezie (2014) reported a minimum of 50,000 and maximum of 300,000 loan access among cooperative farmers in Awka agricultural zone of Anambra State, Nigeria.

### Loan repayments

Table 3 indicated that 4.79% and 7.14% of the male and female farmers respectively repaid loan amount of ₦100,000 while 20.55% male and 19.64% female farmers repaid the ₦150,000 approved for them. The result also recorded that the female crop farmers were better at repayment (89.27%) than the male farmers (87.62%). This result corroborates Okoh *et al.* (2009) and Chiekezie (2014) that female beneficiaries of microcredit loans performed better at repayment than their male counterparts.

### Effects of respondents' socio-economic factors on loan repayment

The multiple regression analysis was adopted to predict the effects of respondents' socio-economic factors (independent variables) on loan repayment (dependent variable). The independent factors used were age of the farmers (AGE), gender (GEN), Educational level (EDU), marital status (MAS), farm size (FAS), household size (HOS), and annual farm income (AFI). Four functional forms (linear, exponential, semi-log, and double-log) of the regression model were fitted with the data and ran using the MINITAB Statistical software. Output of the linear regression analysis (Table 4) gave the best result in terms of number, signs and sizes of the significant parameter estimate and was chosen as the lead equation. The equation is given thus:

$$LRP = -7133 -17.2AGE +6700GEN -241.7EDU +7196MTS + 3803FAS -254.6FAE +358HHS +0.46170AFI$$

A total of eight regressors were included in the model. Two (farm size and age) were statistically significant at 5% probability level, and annual farm income was statistically significant at 1% probability level while the other five (gender,

marital status, educational level, household size and farming experience) were not statistically significant. Some of the statistically not significant variables such as educational level and farming experience exerted negative influences on loan repayment while gender and marital status exerted positive influences on loan repayment.

The coefficient of farm size and annual farm income were positive and had statistically significant effects on loan repayment in accordance with *a priori* expectations. This implies a positive relationship between farm size, annual farm

**Table 4: Estimated Determinants of Loan Repayment**

Predictor	Linear	Exponential	Semi-log	Double-log
Constant	-7133	4.3811	206613	7.018
	(-0.25)	(6.18)	(1.94)	(3.27)
AGE	-17.2	-0.01153	-92548	-0.896
	(-2.01)**	(-0.67)	(-1.09)	(2.08)**
GEN	6700	-0.635	3894	-0.01042
	(0.68)	(-0.25)	(0.91)	(-0.12)
EDU	-241.7	0.01252	1654	0.02035
	(-0.28)	(0.57)	(0.41)	(0.95)
MTS	7196	0.5254	-3432	1.9523
	(0.70)	(1.94)**	(-0.07)	(2.04)**
FAS	3803	-0.02546	40504	-0.3277
	(2.41)**	(-0.63)	(2.28)**	(01.92)**
FAE	-254.6	-0.01049	29121	0.6966
	(-0.38)	(-0.61)	(0.68)	(-0.82)
HHS	358	-0.02076	43698	-0.0004
	(0.27)	(-0.55)	(2.32)**	(-0.00)
AFI	0.46170	0.00000167	7759	-0.0260
	(11.53)***	(2.21)**	(1.14)	(0.19)
R <sup>2</sup>	63.5%	45.4%	45.9%	54.3%
R <sup>2</sup> (Adjusted)	61.1%	41.5%	42.0%	50.3%
F-statistics	18.46	2.38	4.50	3.08
Durbin-Watson Stat.	1.82	2.02	1.33	2.03

Note: \*\*\* and \*\* indicate significant at 1.0% and 5.0% alpha levels, NA= Not Available

Source: Computed from survey data, 2016.

income and loan repayment. That is larger the farm, larger the output and income realizable from it and higher the ability of the producer to repay loan. It could mean that the crop farmers who had larger farm sizes and were able to manage them well, realized more output, income, profit and consequently were able to repay a greater percentage of the loan than farmers with smaller farm sizes. This also means that the probability of loan repayment in Anambra State by crop farmers is higher when the farm is larger and thus annual farm income higher. This result corroborated Oyeyinka and Bolarinwa (2009) that farmers with large farm size have higher loan repayment rates.

The coefficient of age was negative and statistically significant at 5% probability level. The implication is that the higher the age of the farmer, the less he/she is interest in repaying loan. In other words, the older the farmer, the higher the probability of defaulting in repayment; a deduction in line with the findings of Oladeebo and Oladeebo (2008) of higher rates of loan diversion among older smallholder farmers in Ogbomoso agricultural zone of Oyo State, Nigeria.

The coefficient of multiple determination ( $R^2$ ) of 0.635 implied that 63.5% variations in loan repayment was accounted for by the dependent variables, hence the remaining 36.5% was due to random disturbances. The Durbin-Watson statistic value of 1.82 which lies within the benchmark of 2.0 signifies the absence of autocorrelation among observations of the regressors. The F-statistic value of 18.46 was statistically significant at 5% level of probability. This indicated that the socio-economic variables together significantly influenced loan repayment and that the regression model was a good fit.

### Constraints to implementation of the scheme

Problems enumerated by the crop farmers in accessing the loan were: distance from home to the bank; delay in processing the loan; high interest rate charged; high cost of transportation and inadequate collateral/security. On the

other hand, problems associated with loan repayment included poor harvest due to crop failure; market price fluctuation; incidence of pests and diseases; untimely loan disbursement; family commitments; as well as high cost of production.

On the part of the financial institution (Bank of Agriculture), constraints to credit administration by the bank officials were; farmers incomplete application forms, insufficient harvest to meet demand for repayment; diversion of loan by farmers for other things; farmers supplying false data during application; lack of enough collateral; as well as poor supervision of farmers during the loan period. Analyses of these problems were done by comparing the calculated mean

**Table 5:** Problems encountered by the farmers in accessing the agricultural loans

<b>Problem</b>	<b>Mean Score</b>	<b>Rank</b>
Delay in loan processing	3.87**	1 <sup>st</sup>
Untimely disbursement of the approved loan	3.64**	2 <sup>nd</sup>
High cost of transaction	3.55**	3 <sup>rd</sup>
High interest rate	3.36**	4 <sup>th</sup>
Complicated procedure	2.46	5 <sup>th</sup>
Inadequate loan amount	2.39	6 <sup>th</sup>
Distance to the bank from home	1.41	7 <sup>th</sup>
Inadequate collateral securities	0.96	8 <sup>th</sup>

Source: Field survey, 2016.

scores of the constraining variables with the critical mean of 2.50 obtained using a 4- point Likert type scale. The calculated mean scores were also used to rank the problems according to degrees of seriousness. Results of the analyses are shown in Tables 5, 6 and 7.

**Table 5:** Problems encountered by the crop farmers in loan repayment

<b>Problem</b>	<b>Mean Score</b>	<b>Rank</b>
Family commitments	4.01**	1 <sup>st</sup>
Low market prices	3.64**	2 <sup>nd</sup>
Incidences of pests and diseases	3.38**	3 <sup>rd</sup>
Untimely disbursement of loan	3.18**	4 <sup>th</sup>
Poor harvest due to crop failure	2.41	5 <sup>th</sup>
High cost of production	1.94	6 <sup>th</sup>

Source: Field survey, 2016.

### **Constraints encountered by the crop farmers' in accessing the loans**

The data presented in Table 5 showed that four problems were serious having scored above the determined critical mean of 2.5 while five problems were less serious with scores less than 2.5 critical mean score. Based on the analysis, delays on processing the loan had the highest mean score of 3.87, followed by untimely disbursement of the approved loan, high cost of transaction and high interest charged with mean scores of 3.64, 3.55 and 3.36 respectively. Distance from home to the bank and inadequate collateral/ security to obtain loan were less serious with means of 1.41 and 0.96 respectively. Foin (2007) and Oko *et al.* (2009), identified the same problems as not serious.

### **Constraints to loan repayment by the crop farmers**

Table 6 shows the constraints encountered by the farmers in repaying loans. Family commitments ranked highest with a mean score of 4.01, closely followed by low market price (3.64), incidences of pests and diseases (3.38) and untimely

disbursement of loan (3.18). However, poor harvest due to crop failure (2.41) and high cost of production (1.94) were less serious constraints to loan repayment. This result agrees with the result of Onyeagocha, Chidebelu and Okorji (2012) which asserted that family commitments (school fees, extended family problems, burials and burdens on the respondents) as well as low market prices, posed serious problems to loan repayment.

### Problems encountered by B.O.A staff in loan administration

Table 6 indicated that out of the 6 listed problems, 3 problems which included insufficient harvest to meet the loan demands (2.28), poor supervision of farmers during the loan period (2.63) and loan diversion by farmers (2.55) were

**Table 6.** Problems encountered by B.O.A. staff in loan administration

Problems	Mean Score	Rank
Insufficient harvest to meet the loan demands	2.88**	1 <sup>st</sup>
Poor supervision of farmers during the loan period	2.63**	2 <sup>nd</sup>
Loan diversion by farmers	2.55**	3 <sup>rd</sup>
Farmers' incomplete application forms	1.36	4 <sup>th</sup>
Farmers supplying false data during application	1.24	5 <sup>th</sup>
Lack of enough collateral securities	0.86	6 <sup>th</sup>

Source: Field survey, 2016.

serious since the mean score values were higher than 2.5 critical value. The rest including farmers' incomplete application forms; farmers supplying false data during application; as well as lack of enough collateral/securities were not serious. *Okoh et al.* (2009) identified logistic problems, lack of repayment and inadequate fund as some of the problems encountered by microfinance institutions.

### CONCLUSION AND RECOMMENDATIONS

Crop farmers in Anambra State successfully accessed agricultural loans for their farming activities, though approvals and disbursements fell short of applications. Both the male and female farmers made efforts to repay the loans, however the females were better at repayment than their male counterparts. Repayment rates were higher for farmers with large farm sizes and annual farm incomes than otherwise.

Repayment rates would improve if the regulatory institution (ie Central Bank of Nigeria) simplifies loan administration procedures, provides more funds to the Bank of Agriculture, adopts the group lending policy and engages more agricultural extension agents so as to mitigate the identified constraints to loan administration and repayment.

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