



ISSN: 2278 – 0211 (Online)

Contribution Of Agricultural Credit Policy To Yam Production Among Small Scale Farmers In Selected Areas Of Kogi State, Nigeria

Josephine Bosede Ayoola

Associate Professor (Agricultural Economics)
Institute Of Food Security, University Of Agriculture Makurdi, Nigeria

Abstract:

The study aimed at assessing the contribution of Nigeria's Bank of Agriculture (BoA) to yam production among small scale farmers, was carried out at Kabba/Bunu and Idah Local Government Areas of Kogi State, Nigeria. The study specifically sought to describe the socio-economic determinants of farmers' access to agricultural credit from BoA, determine the factors determining the effects of credit obtained on farmers' income from yam production, and identify the problems constraining effective delivery of agricultural credit to farmers by BoA. Sixty farmers were randomly selected from ten community associations that have had transactions with BoA, and another sixty farmers that were non-members of the associations were selected from the ten communities. Primary data were collected by personal interviews using structure questionnaire, and a checklist was used to guide collection of secondary information from staff of BoA in Kogi State. Descriptive statistics such as frequency distribution mean and percentages; gross margin technique; and multiple regression models were used for data analyses. The results indicated that small scale farmers that obtained loan from BoA achieved greater profitability of their yam enterprise. The major factors constraining effective delivery of agricultural credit to farmers included poor loan repayment by farmers, inadequate fund, awareness of respondents about loan procedure, timeliness of disbursement, and transportation. Amount of loan obtained, farm size, educational level, costs of seed, herbicide and labour were positively related to income from yam production; significant at one percent. It was concluded that government's policies on agricultural land and farm inputs such as improved seeds, herbicides and fertilizers should compliment agricultural credit policy to aid the impact on agricultural outputs and income of small scale farmers.

Key words: agricultural credit policy, yam, farm income, Bank of Agriculture, Nigeria

1.Introduction

While agriculture has been and is still the bedrock of Nigerian economy, accounting for one third of the Gross Domestic Product (GDP) and about two third of the labour force (Oyeyinka, 2002); the sector has suffered from inadequate capital mobilization despite successive governments' agricultural credit policies. Okunmadewa (2003) observed that inadequate credit provision has reduced agricultural productivity drastically to the extent that food importation has been on the increase in recent years, which has resulted into decrease in farmers' income, little or no re-investment in the farm and perpetual cycle of rural poverty. Moreover, public policy in mobilizing financial resources for agricultural development has not been very effective due to persistently low productivity which has continued to make private investment in agriculture very unattractive, while the bulk of the investment in agriculture has been from state resources. The proportion of national budget on agriculture consistently falls short of the recommended minimum budgetary allocation for a predominantly agriculture state such as Nigeria (Food and Agricultural Organization (FAO), 1975 cited in Oyeyinka, 2002).

Agricultural credit policy makes provision for priority disbursement of credit to farmers by the Bank of Agriculture in Nigeria (BoA) and other formal financial institutions especially the reformed microfinance banks. The BoA evolved from a merger of the Nigeria Agricultural Cooperative and Rural Development Bank (NACRDB), Cooperative Societies and Commercial Banks; NACRDB having earlier emerged from the merging up of the Nigerian Agriculture and Cooperative Bank (NACB), the Family Economic Advancement Programme (FEAP) and Peoples Bank of Nigeria (PBN) in October 2000 (Ayoola, 2009; Adeyemi, 2008).

Apart from increasing the volume of credit from institutional sources, as opined by William (2007), government's agricultural credit policies through the establishment of the BoA, has consciously made the terms of borrowing for farm production relatively more liberal than for other sectors of the economy compared to what was in operations before the advent of the specialized agricultural finance institution. These terms include concessional interest rate on agricultural loans, relatively long period of moratorium and relaxation of conditions relating to collateral securities. Such credit provision affords farmers the opportunity to

secure necessary capital to finance agricultural operations, as well as increase the use of agricultural inputs and modern farming technologies, towards increasing their agricultural productivity and outputs for household consumption and market.

Adeolu and Taiwo (2004) opined that increased access of farmers to credit would enable them to invest in innovation and modern technology that would guarantee agricultural growth and development. It has been shown that farm level credit if well applied encourages capital formation and diversified agriculture, increases resource productivity, farm size operations, innovation in farming, marketing efficiency, value added and net farm income (World Bank, 2002). Since yam is a major food and cash crop grown in the study area, application of agricultural credit scheme to its production is expected to affect food and income security of small scale farmers.

Despite three decades of the existence of NACRDB (now BoA), credit mobility is still low among rural small-scale farmers; the World Bank (1996) attributed this mainly to high rate of defaults, poor management procedures, loan diversion, and unwillingness to repay loans by beneficiaries. The study therefore, attempted to explore the factors that could enhance the impact of government's agricultural credit policy on farmers' income and agricultural outputs, particularly for improved yam production in the study area. Thus, the hypotheses of no significant relationship between the quantum of loan obtained from BoA and farmers' socio-economic characteristics on one hand, and yam output on the other hand. The aim was to assess the effect of government's agricultural credit policy on income of small scale farmers in Kabba/Bunu and Idah Local Government Areas of Kogi State, Nigeria. Specifically, the objectives were to: assess the effect of socio economic characteristics of farmers on the quantum of loan obtained from BoA; determine the effect of the credit obtained on yam production and farmers' income; as well as identify the problems constraining farmers' access to agricultural credit from BoA in the study area.

2. Methodology

2.1. The Study Area

The study was carried out in Kabba/Bunu and Idah Local Government Areas of Kogi State Nigeria. The area is characterized by two major seasons namely raining and dry season, and there are vast arable lands for farming and grazing livestock. The predominant agricultural crops are cassava, yam, maize, cashews guinea corn; including economic trees such as oil palm, shea butter and locus beans, among others. The vegetation includes derived savannah with the semblance of savannah and rain forest in some areas.

2.2. Data Collection And Sampling Procedure

Data for the study were collected from both primary and secondary sources. Stratified random sampling technique was employed to select 120 farmers from Kabba/Bunu and Idah Local Government Areas of Kogi State. Sixty farmers were randomly selected from ten community associations that have had transactions with BoA, and another sixty farmers that were non-members of the associations were selected from the ten communities. The primary data were collected through farmer interview using structured questionnaire.

2.3. Data Analysis Techniques

Descriptive statistics, such as frequency distribution, percentage and likert scale were used to describe the socioeconomic characteristics of farmers and the constraints on farmers' access to credit policy. Gross margin technique was used to determine the income of farmers from yam enterprise. Multiple regression analyses were carried out to assess the effects of farmers' socioeconomic characteristics on their access to credit policy; as well as that of the quantum of credit obtained on farm output and farmers' income.

2.4. Model Specification

The functional form of the multiple regression model was stated as:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + e_i$$

Where: Y = Amount of loan obtained (₦), β_0 = Intercept, β = Marginal effect of X_5 on Y, X_1 = Awareness, X_2 = Age of respondent (years), X_3 = Educational level (number of years in school), X_4 = Farm size (ha), X_5 = Family size (number of people in the household), X_6 = Income (₦), e_i = Error term

Also, regression functions for farmer's income:

$$I = f(K_1, k_2, k_3, \dots + e_1)$$

Where I = gross margin from yam production (₦), K_1 = Amount of loan (₦), K_2 = Farm size (ha), K_3 = Labour (₦), K_4 = Fertilizer (₦), K_5 = Herbicide (₦), K_6 = Seeds (O = Local, I = Improved), K_7 = Age (year), K_8 = Education (Number of years in school), K_9 = Family size (Number of people in the household)

The five point likert-scale used to describe the constraints on credit access was specified as: Strongly agree, SA (5 points); Agreed, A (4 points); Undecided, U (3 points); Disagree, D (2 points); Strongly disagree, SD (1 point).

Gross Margin technique

$$GM = TR - TVC$$

Where: GM = Gross Margin; TR = total revenue; TVC = Total variable cost

3. Results And Discussion

3.1. Socio-Economic Characteristics Of The Farmers

Results (table1) showed that most of the respondents were in their active production age; 78.4 percent of the respondents were below fifty years while 5.8% of the respondents were above 60 years old. Majority (75.8%) of the respondents were males while

about 24.2 percent were females. Age is one of the determinants of productivity of the farmers in agricultural production (Chinaka, Chikwendu and Asumugha; 1995); so also is gender an important socio-economic variable that could affect access of farmers to credit policy as well as influence farm operations such as land clearing, thinning, weeding and harvesting (Ayoola, 2012). Also, 75 percent of the respondents were married while 12 percent were single, 7.5 percent divorced and 5.0 percent widowed. The modal household size was 3-6, while 9.2 percent of the respondents below three and 39.1 percent were above six. This could affect labor supply as married farmers who have children and other dependents tend to have large family size that could serve as ready source of family labour for farm work. Majority of the respondents had formal education, with 69 percent having a minimum of secondary education; implying high tendency of farmers to understand improved methods of farm management and innovation introduced to them by extension agents.

Socio-economic Variables	Frequency	Percentage (%)
Age (Years): 20-30	17	14.2
31-40	35	29.2
41-50	42	35.0
51-60	19	15.8
Above 60	7	5.8
Divorced	9	7.5
Widowed	6	5.0
Household size: <3	10	9.2
3-6	62	51.7
7-9	35	29.2
10-13	8	6.6
Above 13	4	3.3
Level of Education: No formal education	1	8
Primary education	30	26
Secondary education	42	32
Tertiary education	41	34

Table 1: Socio-Economic Distribution Of Respondents
Source: Field Survey, 2012

3.2. Farmers' Knowledge, Attitude And Practice With Respect To Agricultural Credit Policy

Table 2 showed that 85 percent of the farmers were aware of the existence of BoA, mostly through friends and relatives (39.7%), radio (35%) and newspaper (24.3%). About 50 percent of respondents obtained loan from BoA; which was mostly used for crop production enterprise (60%), animal production enterprise (23%) and mixed farming (17%).

Perception	Frequency	Percentage
Awareness	102	85.0
Perception about service delivery: Excellent	24	20.0
Very good	50	41.7
Good	43	25.8
Poor	15	12.5
Source of Information: Radio	36	35.0
Newspaper	25	24.3
Friends and Relation	65	39.7
Others	1	1.0
Loan usage: Obtained loan	60	50.0
Used for crop production	36	60
Used for animal production	14	23
Used for mixed farming	10	17

Table 2: Level Of Knowledge, Attitude And Practice By Farmers
Source: Field Survey, 2012

3.3. Effect Of Credit Obtained On Profitability Of Yam Enterprise

Comparatively, farmers who obtained loan had greater gross margin income from yam enterprise than the non-beneficiary farmers. The total variable cost among those who benefited was ₦113000; while the total return from the enterprise was ₦272000; and a gross margin of ₦158500 (table 3). On the other hand, farmers who did not obtain loan from BoA incurred total variable cost of ₦19300 and had total return of ₦70000, resulting into gross margin of ₦50700 from their yam enterprise. The mean income of beneficiary farmers was significantly higher than the income of non beneficiary farmers at 5% significance level; implying that BoA funding may be contributing significantly to increased farmers' income in the study area.

Items	Amount (₦)	
	Beneficiaries	Non-beneficiaries
Yam set	24, 000	7000
Herbicide	8, 800	2000
Fertilizer	33, 000	5, 500
Labour cost	33, 000	1, 800
Transportation	14, 200	3000
Total Variable Cost	113, 500	19, 300
Total Return	272, 000	70, 000
Gross Margin = TR – TVC	158, 500 (5941 68.3)	50, 700 (170650)
Standard error	25171.89	6444.585
T	16.737	

Table 3: Gross Margin On Yam Production For Beneficiaries And Non-Beneficiaries Of Boa Credit Scheme
Source: Field Survey 2012

Table 4 also indicated that the amount of loan obtained, farm size, seeds, herbicides, family size, labour and education had positive relationship with farmer's income; while fertilizer and age of farmers were negative. The quantum of loan, farm size, seeds, and herbicides were significant at one percent.

	Coefficient	Standard Error	t	P > /t 1
Loan	1.318413	21 08743	6.08	0.000
Farm size	7397054	24 77498	20 99	0.003
Labour	332146	2.28 6358	0.15	0.885
Fertilizer	- 1.69242	1.05 7937	1.66	0.113
Herbicide	0.0604944	0.924409	0.65	0.514
Seed	90.47214	12. 23.624	7.39	0.000
Age	- 174.4896	721 8156	-0.24	0.809
Education	3675.196	2195.458	1.67	0.097
Family size	7669.374	41352.53	1.71	0.091

Table 4: Regression Parameters For Effect Of Loan On Farmers' Income
 $R^2 = 0.8949$; F- Ratio = 104.02
Source: Field Survey, 2012

3.4. Factors Influencing The Quantum Of Loan Obtained By Farmers

On table 5, R^2 of 0.8420 implied that 84 percent of the variation in the quantum of loan obtained was explained by the independent variables: age, education, farm size and family size; while the remaining 16 percent could be attributed to the error term. Farmers' income, educational level, farm size and age have positive relationship with the quantum of loan acquired; both income and educational level of farmers were significant at 1%, implying that, the higher the income, educational level and land area cultivated by the farmer, the higher the quantum of loan obtained. These results are in line with Ajani (2008) in separate studies. Education will enhance the farmer's ability to plan and take risks; thus, farmer with higher educational level is likely to be more efficient in use of loan obtained, than their counterpart with little or no education. However, the number of persons per household has a negative relationship with the quantum of loan obtained, and the relationship is not significant.

Variables	Coefficient	Standard Error	T	P > /t1
Income	0.2644011	0.0145747	18.14	0.000
Age	347. 8044	321.7179	1.08	0.282
Education	2177.368	648.8157	3.36	0.001
Farm size	0.2947762	0.87 92.76	3.35	0.001
Family size	- 1831.836	0.879 276	-1.33	0.185
Constant	47461.55	13781.58	-3.44	0.001

Table 5: Regression Parameters For The Determinants Of Quantum Of Loan Obtained
 $R^2 = 0.8 420$; F Ratio = 121. 52
Source: Field Survey, 2012

3.5. Constraints On Farmers' Access To Agricultural Credit

On table 6, the percentage of respondents indicating that lack of understanding about loan procedure and untimely disbursement were major constraints faced in benefitting from BoA were 82 and 55.5 respectively. Except for poor transportation with a mean score of 3 (60 percent), indicating uncertainty; other constraints including lack of understanding about loan procedure, untimely

disbursement, poor repayment conditions and inadequate fund had above 60 percent mean scores; indicating that majority of respondents agreed that the constraints were major factors hindering farmers' access to agricultural credit.

Constraints	Strongly Agree	Agree	Uncertain	Disagree	Strongly Disagree	Mean Score
Poor repayment conditions	30 (25)	21 (17.5)	30 (25)	32 (27)	7 (6)	3.3 (66)
Inadequate fund	24 (20)	25 (21)	30 (25)	26 (21.7)	15 (12.5)	3.14 (62.8)
Untimely disbursement	27 (22.5)	40 (33)	19 (15.8)	20 (17)	14 (11.6)	3.66 (73.2)
Lack of understanding of procedure	46 (38)	53 (44)	14 (12)	6 (5)	1 (0.8)	4.10 (82)
Poor transportation	22 (18)	33 (27.5)	16 (13)	28 (23)	21 (17.5)	3.0 (60)

*Table 6: Analysis Of Constraints On Agricultural Credit Delivery By BoA
Figures In Parenthesis () Are In Percentages
Source: Field Survey 2012*

4. Summary, Conclusion And Recommendations

The study assessed the effects of government's agricultural credit policy through the Bank of Agriculture on yam production among small-scale farmers in Kabba/Bunu and Idah Local Government Areas of Kogi State. The objectives of the study were to describe the socio-economic determinants of farmer's access to agricultural credit from the Bank of Agriculture (BoA, former NACRDB), determine the effect of credit obtained on farmer's income, and assess the associated constraints.

Majority of the respondents were male below the age of 50 years and married with no formal education and family size ranging between 3 and 6 years. Also, 85 percent of the farmers were aware of the existence of the BoA, while 50 percent that obtained bank loan had higher farm income than those who did not. It was found that farmers' income, educational level, farm size and age have positive relationship with the quantum of loan acquired; while family size was negative. Both income and educational level of farmers were significant at one percent. Lack of a full understanding of the procedure and timeliness of disbursement were indicated as major constraints undermining the effect of acquired loan on profitability of yam production; and subsequently income of small scale farmers in the study area. Other constraints were poor loan repayment by the farmers, inadequate fund, and lack of transportation for follow up monitoring of loan beneficiaries.

It was concluded that the agricultural credit policy of Nigeria through the BoA is contributing significantly to agricultural production and income of small scale farmers in the area; which could be enhanced if the loan obtained is employed to cultivate larger farm size as well as utilize more improved seeds, herbicides, labor and fertilizers more efficiently.

It was recommended that the bank should put in place a mechanism for more efficient and timely processing of loan application forms and quick release of fund; farmers to form functional cooperative societies and organizations so as to enable them mobilize for support in raising their level of literacy loan repayment discipline. Effective awareness programme should be embarked upon to educate small scale farmers on the procedure for accessing loans from BoA. Government's policies on land and farm inputs such as fertilizers, improved seeds and herbicides, should be packaged along with credit policy to enhance effective use of agricultural credit; thereby promote agricultural production, food security and rural farm income in Nigeria.

5. References

1. Adeolu Taiwo (2004). Present and Potential use of Credit in Nigeria Development and Rural Development. Department of Agricultural Economics, University of Ibadan. Pp 23-24
2. Adeyemi, K.S (2008). Institutional Reform for Efficient Micro Finance Operations in Nigeria Bullion Publication of the Central Bank of Nigeria Vol. 32, No. 1 pp 8-9
3. Ajani, O.I. (2008). Gender Dimensions in Agriculture, Poverty, Nutrition and Food Security in Nigeria. Nigeria Strategy Support Program (NSSP), International Food Policy Research Institute, IFPRI. Pp 5-7
4. Ayoola, G.B. (2001) Essays on the Agricultural Economy: A book of Readings on Agricultural Policy and Administration in Nigeria; TMA Publishers pp 42-43
5. Ayoola, J.B. (2012). Socio-economic Determinants of the Adoption of Yam Miniset Technology in the Middle Belt Region of Nigeria. Journal of Agricultural Science Volume 4, No.6, 2012. ISSN 1916-9752, E-ISSN 1916-9760. Canadian Centre of Science and Education, Toronto, Canada. www.ccsenet.org/jas pp 215-222
6. Chinaka, C. C., Chikwendu, D. O., & Asumugha, G. N. (1995). A socio-economic study of the adoption and sustainability of improved cassava varieties among resource poor farmers in outh-east zone of Nigeria. In Root crops and poverty alleviation. International Society for Tropical Crops African Branch, Malawi, 333-336.
7. Federal Government of Nigeria (2006). National population Census. National Bureau of Statistics.
8. Nigeria Agricultural Co-operation and Rural Development Bank, NACRDB (2005). Organizational Structure of NACRDB Pp. 2-6
9. Nigeria Agricultural Co-operative and Rural development Bank Kabba (2005) Customers Guide. Pp 1-5

10. Okunmadewa, F (2003). Poverty and Agricultural Sector in Nigeria. Cited in Oyeyinka, (2002). Impact of NACRDB on Small Direct Loan Scheme on Farmers in Oyo State Nigeria. Department of Agricultural Economics, University of Ibadan. Pp 29.
11. Oyeyinka, (2002). Impact of NACRDB on Small Direct Loan Scheme on Farmers in Oyo State Nigeria. Department of Agricultural Economics, University of Ibadan. Pp 26
12. World Bank, (1996). Nigeria Poverty in the Midst of Plenty, the Challenge of Growth with Inclusion a World Bank Poverty Assessment. Pp 30
13. World Bank, (2002) World Development Report 2000/2001. Attacking poverty, Oxford, World bank. Pp 12