

Assessment of Rural Farmers' Access to Credit in Jigawa State, Nigeria

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Authors' contributions

This work was carried out in collaboration between all authors. Author IY designed the study, managed the literature searches, wrote the protocol and wrote the first draft of the manuscript. Author ATG finalized the design, protocol, checked the draft report and collected data. Author OOM helped in protocol setting, performed the statistical analysis and their interpretation. All authors read and approved the final manuscript.

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ABSTRACT

Attaining self-sufficiency in terms of food production has been a major policy goal of the Nigerian government and credit is one of the necessary ingredients required to ensure that this comes to fruition. The study assessed farmers' access to credit in Jigawa State. A multistage sampling procedure was used to sample 360 respondents from the four agricultural zones in the state. A structured interview schedule was used to collect data on respondents' socioeconomic characteristics, sources of credit available, access to credit and constraints to credit; these were analysed using descriptive (frequencies, percentages, means, and ranks) and inferential (Binomial Logit and ANOVA) statistics. The mean age was 46.18 years and 61.3% had Quranic education. Majority were males (89.44%), married (96.4%) with a mean household size of 16 members. Mean years of farming experience was 22.51 years and majority (77.8%) do not belong to any cooperative association. Majority (84.72%) did not recognise the presence of any source of credit and majority had no access to credit (84.72%). Lack of credit providing institution ($\bar{x} = 2.70$), lack of awareness of

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credit acquisition source ($\bar{x} = 2.68$), lack of collateral ($\bar{x} = 2.51$), high interest rate ($\bar{x} = 2.44$) and late approval ($\bar{x} = 2.01$) were the major constraints impeding respondents' access to credit. Age, marital status, membership of cooperative society, household size and years of farming experience were significantly related to access to credit. However, there was no significant difference ($F = 1.622$) in respondents' access to credit across agricultural zones in the state. Efforts should be geared towards ensuring the establishment of credit institutions in the study area both by the government and private bodies. The Policy framework for farmers' access to credit should be revisited and necessary adjustment that will favour farmers' access to credit should be considered. Efforts should also be directed at encouraging farmers to constitute themselves into formal cooperative groups to make for easy access to credit, and Information on credit access and the modalities for accessing credit should be made available to farmers where possible and timely.

Keywords: Access; credit; farmers; Jigawa State; Nigeria.

1. INTRODUCTION

Agriculture is largely regarded as the mainstay of the Nigerian economy. According to [1], the sector employs 65-70% of the labour force. It contributes about 45% of the GDP and provides livelihood for over 90% of the rural population [2]. The statistics presented above passes the notion that Nigeria ordinarily should be self-sufficient in food production since a larger proportion of its work force is involved in agriculture, but, this is not the case as the need to revamp the sector has always been on the front banner following the inadequacy of the sector. According to [3] Africa's largest economy Nigeria is spending 1.3 trillion naira (\$6.5 billion) annually to importing food. This is rather disappointing, particularly for a nation with large number of its labour force engaged in agriculture.

The Nigerian agriculture is characterized by mainly peasant farmers and majority of these rural farmers live in the rural area and operate at subsistence level with land holding average of less than five hectares [4]. This assertion is one of the many reasons why agriculture in Nigeria is still very much at its lowest ebb. This is further compounded by several other constraints. [5] highlighted low access to agricultural credit among other problems limiting agricultural productivity in Nigeria.

Credit has been variously defined. [6] posited that credit is an instrument whose effectiveness is a function of finance and economics that goes with it. In the view of [7], it is the ability to obtain goods and services or money now in exchange for promise of payment in future.

Whatever way this may be defined, the role of credit in Agriculture is crucial to agricultural development. According to [8], credit availability

assists in procuring physical inputs, which can induce large productive capacity. This position is reiterated by [9] who opined that Credit determines access to all of the resources on which farmers depend. Several sources of credit abounds in Nigeria, [10] advanced that credit institutions can be categorized into three groups: (a) formal, such as commercial banks, microfinance banks, the Nigeria Agricultural and Cooperative Rural Development Bank (NACRDB), and state government-owned credit institutions; (b) semiformal, such as nongovernmental organizations-microfinance institutions (NGO-MFIs) and cooperative societies; and (c) informal, such as money lenders, and rotating savings and credit associations (RoSCAs).

Studies have affirmed the key role of credit in fostering agricultural productivity and growth. [11] opined that having access to credit facilities and contributes positively to a household's production efficiency. Similarly, [12], posited that access to credit contributed positively towards the improvement of efficiency among tobacco farmers in Uganda. Furthermore, a comparative study by [13] showed that beneficiaries of NACRDB smallholder loan scheme in Oyo State were better-off in term of yield, income, and access to improved farm inputs than non-beneficiaries. By implication, it can therefore, be said that the lack of access to credit by farmers has negative consequence for productivity and growth.

Over the years, policies to favour increase in farmers' productivity and growth have been considered both at Federal and State levels by government and nongovernmental agencies, with special emphases to provision of credits to farmers. [14] posited that "robust economic growth cannot be achieved without putting in

place well focused programmes to reduce poverty through empowering the people by increasing their access to factors of production, especially credit. The latent capacity of the poor for entrepreneurship would be significantly enhanced through the provision of microfinance services to enable them engage in economic activities and be more self-reliant; increase employment opportunities, enhance household income and create wealth”.

The institutionalization of credit providing institutions such as Nigerian Agricultural and Co-operative Bank (NACB), Agricultural Credit Guarantee Scheme (ACGS), Nigerian Agricultural and Rural Development Bank (NARDB), and Non-Governmental Organisation Micro Finance Institutions (NGO-MFI) were among measure put in place to ensure credit availability that will drive the required growth and development in the sector. Recent efforts by the Nigerian government to change the narrative in this sector are quite visible. In 2012, the Federal Government of Nigeria, through the apex bank (the CBN) approved ₦75 billion for the take-off of the Nigerian Incentive-based Risk sharing in Agricultural lending (NIRSAL), this was intended to create access to finance for agribusiness [15]. Consolidating on her stride, the Federal Government again restated its commitment to resuscitate the agricultural sector by creating ₦750 billion agricultural funds in 2016 to boost farmers’ access to credit [16]. In spite of all of these efforts put in place by the government, poor financing however, has constantly been fingered as one of the many problems militating against agricultural development in Nigeria. Studies conducted by [17,1] and [18] attested to this fact. It is also an established fact that Nigeria food importation bill is in the region of \$6.5 billion annually [3]; Putting all of these into perspective vis-à-vis the efforts and commitments of the government towards revitalizing agricultural production, it is evidential that there are lot of questions begging for answers. It is against this backdrop that the assessment of farmers’ access to credit is premised.

1.1 Objectives of the Study

- I. Identify the socio-economic characteristics of the rural farmers.
- I. Determine the sources of credit available to farmers in the study area.
- II. Ascertain respondents’ access credit.
- III. Investigate respondents’ constraints to access credit.

1.2 Hypothesis of the Study

- H_01 : There is no significant influence of socioeconomic attributes of rural farmers on access to credit.
- H_02 : There is no significant difference in access to credit across agricultural zones in the state.

2. METHODOLOGY

2.1 The Study Area

The study area is Jigawa State. It was created on Tuesday 27th August, 1991 out of the old Kano state, the situated in the North-West part of the country between latitudes 11.00° - 13.00° north of the Equator and longitudes 8.00° - 10.15° east of the Greenwich Meridian. The state has a population of 4,361,002 people of which 50.4% are males and 49.6% are females [19]. Eighty-five percent (85%) of the population of the state lives in rural areas. Population density is estimated at 178 people per sq. km. This is above the average national population density of 139 people per sq. km as at 2006. In terms of age distribution, it is estimated that about 42.2% are below the age of 15 years, 49% are between 15 – 59 years while 8.8% are 60 years and above. Based on national estimates, life expectancy in the Jigawa State was 47.8 years for males and 48.5 years for females as at 2008 [20]. The overall literacy rate in 2002 was 37% (22% women and 51% men), with the primary school enrolment rate of 29.6% [21]. The population is predominantly engaged in rural and subsistence farming. Agriculture is therefore the mainstay of livelihood for over 90% of the population. Agricultural production in the state is heavily reliant upon rainfall and the use of traditional (Local) implements. The land mass is also potentially conducive for dry season farming. The major rain fed crops grown in the state includes millet, sorghum, cowpea, groundnut, cocoyam, soya beans. Dry crops include sugarcane, Hot pepper, okra, tomatoes, onions and spinach. The major livestock kept in the state includes, small ruminants (sheep and goat), poultry, cattle etc. The major rivers in the state that provide water for irrigation activities are the Hadejia and Katagum rivers. The Hadejia-Nguru River has the largest Fadama area in Nigeria [22].

2.2 Sampling and Analytical Procedure

The study employed a multi-stage sampling procedure to select respondents across the 27

Local Government Areas of the State. The population for the study are arable crop farmers. The selection criteria involved a purposive selection of the existing four agricultural zones in the state. This was followed by a selection of three LGAs in each of the zones on the basis of their volume and prominence of arable crop production. The selected LGAs were; Birnin-Kudu, Gwaram and Miga from Birnin-Kudu Zone, Garki, Maigatari and Ringim from Gumel Zone, Hadeija, Mallam Madori and Auyo from Hadeija Zone and Kazaure, Sule-Tankarkar and Roni from Kazaure Zone. The next stage involved a random selection of three farming communities/villages each from the 12 selected Local Government Areas, to give a total of 36 farming communities. The last phase involved a random sampling of ten (10) respondents from each of the 36 communities from a list of arable crop famers in the area to give a total of 360 respondents to whom the well-structured questionnaire was administered; This was used to collect information on the respondents' socioeconomic characteristics, sources of credit, respondents' access credit, and constraints to access to credit. Respondents' access to credit was measured on a two point scale of yes or no with a score of 1 and 0 respectively. Constraints to access to credit was measured on a three point scale of severe, mild and not a constraint, scores of 2,1 and 0 were awarded accordingly, mean scores were computed and used to rank the constraints Data collected were analysed using descriptive (frequencies, percentages, means, and ranks) and inferential (Binomial Logit regression and ANOVA) statistics.

2.2.1 Binomial Logit regression model

$$P_i = f(Z_i) = \frac{1}{1 + e^{-(\alpha + \beta_i X_i + \epsilon_i)}}$$

Where

- P_i = probability of access to credit
- e = the base of natural logarithm
- X_i = a vector of explanatory variable
- α and β_i = the regression parameters to be estimated, and
- ϵ_i = Random error terms

$$Z_i = \alpha + \sum_{i=0}^n \beta_i X_i + \epsilon_i$$

By the introduction of a dichotomous response variable, Y_i ,

$$Y_i = \begin{cases} 1 & \text{if } Y^* > 1 \\ 0 & \text{otherwise} \end{cases}$$

Where

- 1 = Access to credit
- 0 = No access to credit
- i = Number of respondents

In explicit terms,

$$\text{Logit} \left(\frac{P_i}{1 - P_i} \right) = Z_i = \gamma_0 + \gamma_1 \phi_1 + \gamma_2 \phi_2 + \gamma_3 \phi_3 + \dots \gamma_n \phi_n$$

Where

- $\gamma_0 - \gamma_1$ = are the parameters to be estimated
- ϕ_1 = Age (years)
- ϕ_2 = Gender (1= male, 0= female)
- ϕ_3 = Marital status (1= married, 0= otherwise)
- ϕ_4 = Years of farming experience (years)
- ϕ_5 = Household size (persons)
- ϕ_6 = Educational status (1 =formal, 0= informal)
- ϕ_7 = Primary occupation (1= farming, 0= otherwise)
- ϕ_8 = Membership of cooperative society (1=Yes, 0= No)

3. RESULTS AND DISCUSSION

3.1 Socio-economic Characteristics of the Respondents

3.1.1 Age distribution

The distribution of respondents on the basis of age as shown in Table 1 revealed that 33.11% of the farming population falls within the age bracket of 41-50 years, whereas 25.56% and 20.00% were within the age brackets of 51-60 and 31-40 years respectively. The implication of this finding connotes that farming activities are carried out by individuals that are matured, active and responsible enough to assume the headship of the family land. However, some studies showed that age have an inverse relationship with productivity of farmers [23,24,25,26,27] and [28]. These findings were understandable since it is expected that as a farmer (household head) becomes aged, his or her productivity is expected to decline. This position is contradicted by the findings of [29] who reported that the age of a farmer is very important in farming business as it entails experience. The older a farmer is;

the more experience he has since he is expected to have acquired much farming techniques.

3.1.2 Gender

Gender distribution of the respondents as presented in Table 1 shows that, majority of the respondents (89.44%) in the study area were males with only 10.56% females. This signifies that farming activities are mostly carried out by men in spite of the high population of women (49.60%) in the state as reported by the 2006 census. This trend might not be unconnected with religious, cultural and customary inclinations of the people in the locality. Studies have shown connection between agricultural production status and gender [30] and [31]. The result of this study is in consonance with the findings of [32] who offered evidence of gender differentials in agricultural production in Nigeria with women's lower productivity arising from their weak bargaining position within the family and in the labor market. Further, support for this gender bias in Africa is derived from the fact that women have far less access to land and other productive inputs [31].

3.1.3 Marital status

The analysis on marital status as presented in Table 1 depicted that 96.39% of the respondents were married. This implies that there were more married individuals in farming. This is in line with the position of [29] that the farming activities are done mostly by people who are married and are responsible enough to take family decisions. The finding is also in consonance with the position of [33] who posited that marriage brings an array of benefits in economic terms, since marriage generally adds a potential economic earner to the household. It is therefore obvious that marriage increases the economic well-being of members of the family.

3.1.4 Household size

Result obtained on household size as revealed in Table 1 showed that majority (65.8%) of the respondents have household sizes of 11 members and above. This indicates that most of the farmers have quite large household size and the benefit of this is large labour force that will support the family farming activities. This assertion is supported by the position in Oladoja and Adekun [34] (2009) that in societies where little mechanization is practiced, most economic production activities are carried out manually. However, large household size has been identified in some quarters to be detrimental to

productivity; [11] showed that the higher the dependency ratio and the higher the ratio of female adults relative to all adults living in a household, the lower will be the farming household productivity. In the same vein, evidences abound in literatures that large households are associated with poverty [35,36, 37] and [38].

3.1.5 Educational status

The distribution of the respondents according to their level of education depicts that 61.39% of the respondents have acquired Quranic education and a handful of them (11.39%) had tertiary education (Table 1). This implies that majority of the respondents had Quranic education. Education however, is one of the key assets needed to foster productivity in any profession. Findings of [39,23,40,24,25,41,26,42] and [43] confirmed that education was key to enhanced productivity among farming households in the humid forest, dry savannah and moist savannah agro-ecological zones of Nigeria. This is likely because higher education propels heads of farming households to adopt new innovations and technologies that are vital to enhancing farm productivity and improved economic status. It therefore suggest that increase in education will favour the chances to access credit as it will make for a better understanding of the modalities for obtaining credits. This assertion is in total agreement with the position of [44] that the basic objective of any form of education is to impart knowledge which would influence a change in attitude, skills, or knowledge.

3.1.6 Farming experience

Respondents years of farming experience as shown in Table 1 indicated that 25.83%, 29.44% and 20.0% had years of farming experience ranging between 11-20, 21-30 and 31-40 years respectively. The mean years of farming experience is 22.5 years. This distribution clearly showed that the respondents have sufficient years of farming experience. A number of authors averred that the years of farming experience is a critical factor that enhances productivity among farming households. Years of farming experience in Nigeria increases as age of the farmer increases. Age is also positively correlated with productivity as older farmers have also been observed to have higher productivity than younger farmers. [38,24,25] and [26] observed that productivity in the humid forest and moist savannah agro-ecological zones of Nigeria

was positively associated with more experience in farming.

3.1.7 Primary occupation

Table 1 shows the distribution of the respondents according to their primary sources of income or

occupation. It is shown that majority (65.28%) of the respondents averred that they draw their income chiefly from farming. This finding agrees with the assertion that about 80% of the population engaged in subsistence farming [45].

Table 1. Socio-economic characteristics of respondents (n=360)

Variables	Frequency	%	Mean	SD
Gender				
Male	322	89.44		
Female	38	10.56		
Age (years)				
Less than 20	2	0.56		
21-30	25	6.94		
31-40	72	20.0	46.18	3.68
41-50	121	33.1		
51-60	92	25.6		
Above 60	48	13.3		
Marital status				
Single	5	1.4		
Married	347	96.4		
Divorced	5	1.4		
Widowed	3	0.8		
Level of education				
No formal	14	3.9		
Quranic	221	61.3		
Primary	64	17.8		
Secondary	20	5.6		
Tertiary	41	11.3		
Primary occupation				
Public Servant	33	9.2		
Arable Crop Farming	235	65.3		
Vegetable Farming	18	5.0		
Tree crops	6	1.7		
Livestock Farming	34	9.4		
Fish Farming	3	0.8		
Poultry Farming	2	0.6		
Commodity marketing	18	5.0		
Agro-processing	44	1.1		
Farming experience				
≤10	37	10.3		
11-20	93	25.8	22.51	
21-30	106	29.4		
31-40	72	20.0		
>40	52	14.4		
Household size				
≤5	32	8.9	16	
6-10	91	25.3		
11-15	85	23.6		
≥ 16	152	42.2		
Membership of cooperative society				
Yes	80	22.2		
No	280	77.8		

3.1.8 Membership of cooperative societies

Respondents' membership of cooperative societies on Table 1 shows that only 22.2% of the respondents belong to one cooperative society or the other. Majority of the respondents (77.8%) claimed ignorance of the activities of cooperative societies and therefore do not belong to any. This implies that most of the respondents operated as individual farmers rather than as members of cooperative societies. Cooperative societies possess some elements of social networks that are vital for enhancing group dynamics, financial support and farm productivity. [46] and [42] were of the view that social capital enhanced productivity among crop farmers in the humid forest, dry savannah, and moist savannah agro-ecological zones of Nigeria. This was likely because social capital tends to promote group dynamics, enhance membership welfare and reduces conflict towards improving productivity of farming households.

3.2 Sources of Credit Available to Respondents

Fig. 1 presents the distribution of various sources of credit options available to farmers. The sources of credit available ranges from friends and relatives (10.83%) to microfinance banks (2.22%) and commercial banks (2.50%). Greater proportion of respondents (82.72%) acknowledged the non-availability of credit sources in their locality. This implies that credit providing agencies are in short supply in the study area. The short supply of these sources

may hamper farmers' access to credit and ultimately impact on their productivity. This suggest that the federal government drive to ensure that farmers have access to credit through it various interventions is still very much a mirage particularly in rural areas where majority of these farmers reside. This assertion is in line with the position of [47] who opined that smallholder farmers still have the problem of credit accessibility which hinders them from meeting up with their financial needs for improved agricultural production.

3.3 Respondents' Access to Credit Facilities

Another important factor that has been empirically proven to influence agricultural production is accessibility to credit. [11] evinced that having access to credit facilities contributed positively to a household's production efficiency in Nigeria. Similarly, [12], showed that access to credit contributed positively towards the improvement of efficiency among tobacco farmers in Uganda. On respondents' access to credit facilities, Table 2 shows that 84.72% of the respondents had no access to credit. This implies that majority of the respondents had no access to credit despite all the interventions created by the Federal Government. Thus, suggesting a re-visitation of the credit delivery system as well as the modalities for obtaining it. The result is in line with the findings of [48] that only 18 percent of farm households (comprising of small scale farmers) have access to financial services.

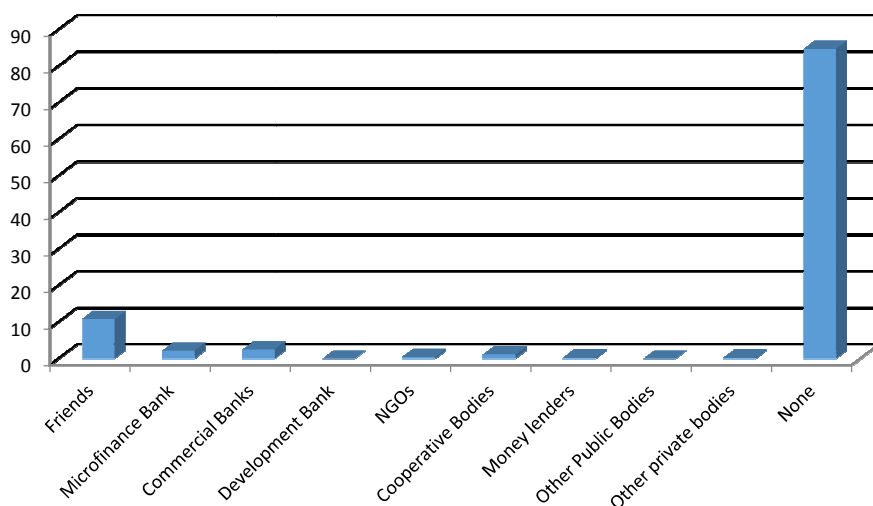


Fig. 1. Source of credit facilities

Table 2. Distribution of respondents based on access to credit facilities

Access	Frequency	Percentage
No	305	84.72
Yes	55	15.28

3.4 Respondents’ Constraints to Access Credit

The result on Table 3 Lack of credit providing institution ($\bar{x} = 2.70$) ranked as the highest constraint faced by respondents. This was followed by Lack of Awareness on credit acquisition ($\bar{x} = 2.68$), Lack of collateral and security ($\bar{x} = 2.51$) and High Interest Rate charged on loan ($\bar{x} = 2.44$). This is in line with the position of [49] who also found out that lack of collateral, lack of guarantor, high interest rate and mode payment were prominent among constraints impeding access to credit.

Table 3. Constraints to access credit

Variables (N=360)	Mean	Rank
1 Lack of credit providing institution	2.70	1 st
2 Lack of Awareness of credit acquisition sources	2.68	2 nd
3 Lack of collateral and security	2.51	3 rd
4 High Interest Rate	2.44	4 th
5 Late Approval	2.01	5 th
6 Lack of guarantor	1.86	6 th
7 Administrative charges in form of kick backs	1.86	6 th
8 Religious restriction on interest loan	1.51	8 th
9 Mode of Repayment	1.45	9 th

3.5 Test of Hypothesis

3.5.1 H₀1: There is no significant influence of socioeconomic attributes of rural farmers on access to credit

The result on Table 4 show that marital status, membership of cooperative society, age, and household size were significantly related to access to credit. The results revealed that

marriage and age were positively related to access to credit thus, increasing the chances of accessing credit. This may probably due to the fact that both age and marriage confer some level of responsibility. The findings on marital status agrees with the position [49] However, member of cooperative society, household size and years of farming experience were negatively related to access to credit. The result on household size may not be unconnected with the tendency that households with large family sizes have high probability to default hence are less likely to qualify for loans; this is consistent with the finding of [50] and [51]. The result on membership of cooperative society and years of farming experience negates the apriori expectation; The plausible reasons for this may not be unconnected with the constrains associated with access to credit in the study area.

Table 4. Binomial Logit Estimate of access to credit

Variables	B	S.E	Wald	p-value
Constant	-1.937	0.738	6.194	0.13
Gender	0.113	0.500	0.051	0.822
Marital status	1.266*	0.680	3.464	0.063
Education	-0.251	0.338	0.554	0.457
Primary occupation	0.450	0.327	1.900	0.168
Membership	-0.848***	0.329	6.643	0.010
Age	0.030*	0.018	2.821	0.093
Household size	-0.042*	0.023	3.484	0.062
Farming experience	-0.017	0.015	1.320	0.151

*0.1 level of significance
 ** 0.05 level of significance
 ***0.01 level of significance

3.5.2 H₀2: There is no significant difference in access to credit across agricultural zones in the state

The results in Table 5 shows that there was no significant variation in respondents’ access to credit (F= 1.622) across the Agricultural zones in the state. This implies that respondents do not differ in their responses to access credit across

Table 5. ANOVA analysis showing the variation in respondents’ access to credit across agricultural zones (n=360)

	Sum of squares	Df	Mean square	F-value	p-value
Between groups	86.875	3	28.958	1.622	0.184
Within groups	6354.900	356	17.851		
	6441.775	359			

the agricultural zones in the state. This corroborates the earlier findings of this study that majority of the respondents do not have access to credit. This suggests inefficiency in the delivery system and respondents' constraints may perhaps be plausible reasons for this trend.

4. CONCLUSION AND RECOMMENDATIONS

The study concluded that overwhelming proportion of the respondents do not have sources of credit and lack access to credit. Lack of credit providing institution/body, lack of awareness of credit acquisition sources, lack of collateral and security, High interest rate, late approval and lack of guarantor were the major constraints impeding respondents' access to credit.

In order to break free from the vicious cycle of small scale production and ensure that farmers' productivities are greatly improved, it is pertinent to address certain issues that are germane to access to credit in the study. It is based on this that the following recommendations were made;

- Efforts should be geared towards ensuring the establishment of credit institutions in the study area both by the government and private bodies.
- Government should revisit the policy framework pertaining to access to credit and make necessary adjustment that will favour farmers' access to credit.
- Efforts should also be directed at encouraging farmers to constitute themselves into formal associations to make for easy access to credit.
- Information on credit access and the modalities for accessing credit should be made available to farmers where possible and on time.

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COMPETING INTERESTS

Authors have declared that no competing interests exist.

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