



Financial inclusion and its effect on achieving sustainable economic development in the Nigerian agriculture sector

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ABSTRACT

One of the key challenges facing Nigeria's agriculture sector is the limited access to finance. Exploring whether improving financial services for farmers can contribute to sustainable development in Nigeria is an important area of focus. To address this, the study employed a survey research design to gather and analyze the views of 250 farmers' in five States of the North West Nigeria, these are: Kano State, Kaduna State, Katsina State, Sokoto and Kebbi State with 50 farmers chosen from each state. Ultimately, 215 completed questionnaires were retrieved and analyzed. The research instrument gathered socio-economic data, such as the farmers' education levels, farm sizes, and years of experience, which were used to assess their perceptions. Descriptive statistics, including mean and standard deviation, as well as inferential statistics like the Kruskal-Wallis test was used for data analysis. The findings suggest that enhancing financial inclusion within the agricultural sector can play a crucial role in achieving sustainable development. The study recommends increasing the presence of financial institutions in rural areas and promoting financial discipline, among other strategies, to support financial inclusion in agriculture.

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1 | INTRODUCTION

Before Nigeria gained independence in 1960, agriculture was the largest contributor to the nation's Gross Domestic Product (GDP). It was the primary source of employment, facilitated foreign currency earnings, and established Nigeria's reputation internationally. However, with the discovery of mineral oil in the 1970s, oil and gas became the dominant sectors of the economy, leading to a shift in focus away from agriculture. Aside from agriculture and oil, other key sectors of the Nigerian economy, such as manufacturing, construction, energy, and oil and gas, have attracted foreign direct investment (FDI), seen significant growth, and delivered positive economic outcomes. One key factor driving this growth is the high level of interest and economic activity in these sectors, unlike agriculture, where interest has declined over time despite Nigeria's favorable natural climate. Oyewo and Badejo (2024) defined sustainable development as the use of resources to meet the economic, social, and environmental needs of humans, ensuring that the interests of both present and future generations are served. Sustainable economic development aims to address the economic needs of the current generation while safeguarding the ability of future generations to meet their own needs. Agriculture relies on natural resources such as water, soil, wind, and biodiversity to meet human needs. These resources should be managed in a way that does not jeopardize their future availability for sustaining the economy. Given the historical contributions of agriculture to Nigeria's development, addressing the current challenges facing the sector is crucial to repositioning it for inclusive, sustainable growth. A major issue within agriculture is access to finance, a problem that financial inclusion aims to solve. The Central Bank of Nigeria (CBN) highlighted that funding for Nigeria's agricultural sector is approximately 2% of total bank lending, compared to 6% in Kenya. Financial inclusion challenges are not limited to agriculture but affect the broader Nigerian economy. According to the CBN, about 83.9% of money in circulation operates outside the formal banking sector, indicating that many sectors seek financial services outside the banking system. Furthermore, Afolabi (2021) reported that a study by Enhancing Financial Innovation and Access (EFInA) revealed that 34.9 million adults (39.7%) in Nigeria are financially excluded. This paper, however, focuses specifically on the agricultural sector.

In view of this, it is worth exploring whether increasing access to financial services within the agricultural sector can contribute to sustainable development in Nigeria or not. This issue forms the basis of this. In other words, can financial inclusion in agriculture be an effective strategy for achieving sustainable development in Nigeria? The structure of the paper is as follows: the next section reviews existing literature on the role of agriculture in promoting sustainable economic development and the issues surrounding financial exclusion in the sector. This is followed by an explanation of the research methodology used in the study, then an analysis

of the data and discussion of the findings. The paper concludes with a section summarizing key points and offering recommendations.

2 | LITERATURE REVIEW

2.1 | The Concept of Financial Inclusion

Financial inclusion refers to the ability of individuals, particularly those from financially disadvantaged backgrounds, to access essential financial services. Having a bank account alone is not sufficient evidence of financial inclusion; true inclusion is determined by the accessibility to all necessary financial services within the formal financial sector. According to Ibeachu (2020), and Oladeebo (2018) noted that there are six categories of financial exclusion:

- (i) Physical access exclusion, where individuals are unable to reach banking facilities due to factors like branch closures or poor infrastructure;
- (ii) Access exclusion, which occurs when a customer is deemed high-risk during credit assessments;
- (iii) Condition exclusion, which happens when individuals cannot meet the necessary requirements to qualify for loans;
- (iv) Price exclusion, which arises when loan costs are too high for individuals to afford;
- (v) Market exclusion, where financial products are tailored for specific groups or individuals, leaving others out; and
- (vi) Self-exclusion, where individuals choose not to seek financial services for personal reasons. McAteer (2018) argued that improved access to financial services and affordable loans positively impacts the economy.

Exclusion from the formal financial system according to Bruhn and Inessa (2019) has been driven by factors such as high borrowing costs, expensive transaction fees, a focus by financial institutions on sectors with high short-term returns, the lack of financial outlets in rural areas, difficulties in meeting documentation requirements, lack of adequate collateral, and expensive account maintenance fees. These issues affect various sectors, including agriculture. The International Finance Corporation identified sector-specific causes of exclusion in agriculture, such as perceived high risk, complex credit processes, high transaction costs, and limited understanding of the sector's unique needs. These challenges led to the creation of the Nigeria Incentive-Based Risk Management System for Agricultural Lending (NIRSAL), which aims to address issues in the agricultural value chain and provide technical support to banks to promote agricultural lending. Other initiatives, such as the Nigerian Bank of Agriculture, which transitioned from the Nigeria Agricultural Cooperative and Rural Development Bank (NACRDB), have also been implemented to improve financial access for agriculture (Badewole 2021). In addition, commercial banks in Nigeria are required to prioritize lending to agriculture. However, the difficulty in

accessing formal financial systems has led many farmers to turn to informal financial options, particularly cooperative societies. Farmers also contribute to the barriers to credit access due to issues like mismanagement of funds, lack of financial literacy, poor record-keeping, failure to repay loans on time, inability to provide collateral, and limited attractiveness to banks. Ayodele et al. (2023) and Ojo (2020) pointed out that farmers have shown poor responsiveness to loan repayments, which has resulted in liquidity problems for banks and, in some cases, the collapse of financial institutions. Adebayo and Adeola (2018) highlighted that farmers' resistance to repaying loans has led banks to withhold future loans. Ojo (2020) added that 66.99% of small-scale farmers in Nigeria use loans for agricultural activities, while 31.07% divert these funds for personal expenses like paying school fees and medical bills.

2.2 | Nigerian Agriculture Sector

Despite Nigeria's rich natural resources and its historical reliance on agriculture for economic development—through exports of groundnuts, cocoa, and palm oil, as well as job creation—the sector's potential is still under-utilized. In the 1960s and 1970s, agriculture contributed 60% and 49% of the Gross National Product (GNP), respectively. There is still significant potential for further contribution. Harwood et. al, (2021) and Fatima noted that while 75% of Nigeria's land is suitable for agriculture, only 40% is cultivated. Maximizing agricultural activities could spur further national development. This potential is reflected in Nigeria's Vision 2020, which sought to position the country among the world's 20 largest economies. Financial exclusion remains a significant challenge within the agricultural sector. To achieve sustainable development, it is crucial to address the sector's financial needs through enhanced financial inclusion. If the country aims to reach sustainable development, agriculture must be extensively developed. Financial inclusion in agriculture can boost productivity, drive economic growth, and contribute to sustainable development. Armah and Park (2022) and Kempson (2016) all argue that increased financial support for agriculture would accelerate Nigeria's economic growth and long-term sustainability. Ayanda and Ogunsekan (2022) and Nwankwo and Nwankwo (2014) also emphasized that financial inclusion boosts the flow of credit to small-scale enterprises, which helps create jobs and increase income for rural populations, most of whom are involved in agriculture. Thus, it is hypothesized that:

H1: Financial inclusion in the Nigerian agriculture sector can be used to achieve sustainable development.

3 | METHODOLOGY

This study employed a survey research design, using cluster sampling. A total of 250 farmers were selected from five States of the North West Nigeria, these are: Kano State, Kaduna State, Katsina State, Sokoto and Kebbi State with 50 farmers chosen from each state. Ultimately, 215 completed questionnaires were retrieved and analyzed. The research instrument gathered socio-economic data, such as the farmers' education levels, farm sizes, and years of experience, which were used to assess their perceptions. Descriptive statistics, including mean and standard deviation, as well as inferential statistics like the Kruskal-Wallis test and partial correlation, were used for data analysis.

4 | ANALYSES AND DISCUSSION

4.1 | Challenges in accessing loans from financial institutions

Table 1: Perception of Farmers on the challenges of accessing loan from financial institutions

Item	Mean	Std. Dev.	p value*
Interest rate is high and unaffordable	4.96	0.101	0.606
Loan processing takes a lot of time and process	4.93	0.117	0.134
Cost of loan processing is high	4.85	0.120	0.211
Lack of confidence by banks in the Agriculture sector	4.75	1.068	0.001
Non-availability/Inadequacy of collateral to backup loan	4.65	1.068	0.116
Poor/Non-existent financial records/documents for loan	4.55	0.134	0.004
General unwillingness of banks to lend to Agriculture sector	3.98	0.969	0.034
Inability to access financial institutions in remote locations	30.80	0.120	0.129
Non-financial viability (liquidity, profitability)	3.80	0.702	0.093
Inability of farmer to meet minimum equity contribution	3.75	1.050	0.119

* P value from Kruskal –Wallis test using size of farming business as grouping variable.

The challenges in accessing finance, as shown in Table 1, include high interest rates that make loans unaffordable (M = 4.96, SD = 0.101), long

processing times and complex loan procedures (M = 4.93, SD = 0.117), and the high cost of loan processing (M = 4.85, SD = 0.120). The Kruskal-Wallis p-values for these factors—interest rate (.606), loan processing time (0.134), and loan processing cost (.211)—are all above 0.05, indicating that, at a 5% significance level, there are no significant differences in how farmers perceive these as barriers to financial inclusion. This likely explains why many farmers opt to engage with the non-formal financial sector. Another challenge is the lack of confidence in Nigeria's agricultural sector by banks (M = 4.75, SD = 1.068, p = 0.001), which may contribute to their general reluctance to lend to the sector (M = 3.98, SD = 0.969, p = 0.034). There is a noticeable difference in the perception of this issue, as reflected in the p-values. Over time, the agricultural sector has lost attention in favor of the oil and gas industry, with the budgetary allocation to agriculture falling from 1.77% in 2013 to 1.47% in 2014. This shift suggests that financial institutions are more inclined to finance booming sectors than agriculture. Additionally, the challenge of accessing financial institutions in remote areas is a significant barrier to financial inclusion in agriculture (M = 3.80, SD = 0.120). An inferential analysis with a p-value of .129 indicates that farmers' perceptions of this issue do not show statistically significant differences. Given that farmers operate in both rural and urban areas, it is crucial for them to access financial services, particularly those located in rural areas. This gap highlights the failure of formal financial institutions to meet these needs, creating opportunities for informal fund providers. Ideally, proximity to financial institutions would offer benefits like monitoring of fund usage, financial advisory services, training in financial management, and other support, which farmers should enjoy to be considered financially included.

Additional factors contributing to financial exclusion are related to individual farmers' inability to meet requirements for creditworthiness, such as collateral (M = 4.65, SD = 1.068), financial records and documents (M = 4.55, SD = 0.134), financial viability in terms of liquidity, profitability, and solvency (M = 3.80, SD = 0.702), and minimum equity contributions (M = 3.75, SD = 1.050). With p-values greater than 0.05 for these factors, it can be concluded that these factors remain significant obstacles to accessing finance from financial institutions, regardless of the size of the farming business.

4.2 | Challenges in repaying loans from financial institutions

Table 2: Perception of Farmers on the challenges of repaying loans from financial institutions

Item	Mean	Std. Dev.	p value
Repayment period is short relative to when stocks start yield	4.74	0.162	0.232
Refusal by financial institution to extend repayment period	4.53	0.672	0.616
Stock losses to death, disease or theft cause financial setback	4.64	0.171	0.101
Lack of proper fund management	4.69	0.797	0.039
Funds diversion by farmers to other non-productive use	4.66	0.260	0.284
Inability to generate sufficient revenue to repay loan	4.65	1.092	0.000
Notion by farmer that loan is a grant, which is not repayable	4.53	0.337	0.331

P value from Kruskal-Wallis test using size of farming business as grouping variable.

In Table 2, the short repayment periods in relation to the time when farm produce begins to generate returns (M = 4.74, SD = 0.162), along with the refusal of financial institutions to extend repayment periods (M = 4.53, SD = 0.672), place significant pressure on farmers to meet their loan obligations. This can lead to repayment issues that farmers might struggle to resolve. All farmers agree that these two challenges affect them (p values of 0.232 and 0.616, respectively), regardless of the size of their farming operations. Investing in agriculture requires patience due to the time gap between planting and harvesting. One of the major risks in farming is the potential loss of stock, which can result in financial setbacks (M = 4.64, SD = 0.171). Losses from death, disease, or theft may leave farmers unable to generate enough revenue to repay loans (M = 4.65, SD = 1.092). While farmers generally agree that stock losses contribute to financial problems and hinder repayment ability (p = 0.101), there is a significant difference in opinions regarding the inability to repay due to insufficient revenue generation (p = 0.000). Larger farms may be better positioned to repay loans due to economies of scale, including more efficient resource acquisition and output distribution, lower per-unit production costs, improved fund management, employment of skilled labor, and easier access to finance. In contrast, small or startup farming businesses are more likely to struggle with repayment. This is consistent with Onaolapo and Odetayo (2022) and Oyewo and Oyewole (2014) findings that socio-economic factors, such as farm size, impact the ability to repay loans. The belief that loans are grants that do not need to be repaid (M = 4.53, SD = 0.337) may lead to the diversion of funds for non-productive uses (M = 4.66, SD = 0.260) or poor fund management (M = 4.69, SD = 0.797), ultimately resulting in financial difficulties and

challenges in repaying loans. With p values above 0.05 for these variables, it is clear that farmers share similar perceptions regarding these factors as causes of loan repayment issues. This is in accordance with the findings of Omorogbe et. al, (2024). However, there is a significant difference in how farmers view the impact of poor fund management on their ability to repay loans (p = 0.039); large-scale farming operations are more likely to recognize the importance of proper fund management, while startup businesses may not. Ultimately, the inability to repay loans for any reason, as shown in Table 2, discourages banks from offering further credit to farmers, thereby excluding them from the formal financial system.

4.3 | Government’s concern and involvement in addressing financial inclusion challenges

Table 3: Farmers’ perception on the federal government’s concern and involvement in addressing financial challenges in the agriculture sector

Concern about financial inclusion			Involvement in addressing challenges		
Response	%	p value*	Response	%	p value*
Very Concerned	0.051	0.223	Deeply involved	-	-
Moderately concerned	0.122	0.069	Moderately involved	0.112	0.112
Just concerned	0.482	0.352	Just involved	0.661	0.037
Not concerned at all	0.346	0.000	Not involved at all	0.225	0.360

* P value from Kruskal-Wallis test using level of Education as grouping variable.

Table 3 illustrates farmers’ perceptions of the federal government’s concern for financial inclusion in the agriculture sector, as well as the government’s involvement in addressing this issue. The analysis includes differences based on farmers’ education levels. The responses to the government’s level of concern were: 5% very concerned, 12% moderately concerned, 48% somewhat concerned, and 35% not concerned at all. The majority of responses (83%) were in the "somewhat concerned" or "not concerned at all" categories, indicating a generally low level of concern. The "not concerned at all" response has a p-value of 0.000, suggesting that opinions on this matter vary significantly among farmers. More educated farmers may have a better understanding of the government’s past policies aimed at revitalizing the sector, potentially influencing their perception of the government’s concern. However, the responses for "very concerned" (p = 0.223), "moderately concerned" (p = 0.069), and "somewhat concerned" (p = 0.352) all have p-values above 0.05, indicating no significant differences in perceptions among farmers based on education level. Regarding the government’s involvement in addressing financial inclusion challenges, responses were: 11.5% moderately involved, 66% somewhat involved, and 22.5% not involved at all. No respondents considered the government to be highly involved. Similar to the previous question, a majority of responses (88.5%) were in the "somewhat involved" or "not involved at all" categories. The "somewhat involved" response has a p-value of 0.037, indicating differing opinions among farmers. However, the responses for "moderately involved" (p = 0.112) and "not involved at all" (p = 0.360) have p-values greater than 0.05, suggesting no significant difference in farmers’ views on the extent of government involvement in financial inclusion, regardless of their education level.

4.4 | Perceived outcomes of increased access to finance by farmers

Table 4: Farmers’ perception on outcomes from increased access to finance in the Nigerian agriculture sector.

Item	Mean	p value*	
		Education	Experience
Increase in output as a result of increase in input	4.64	0.145	0.232
Increase in acquisition of resource inputs	4.73	0.932	0.733
Economies of large scale in resource input acquisition	4.59	0.187	0.263
Economies of large scale in output distribution	4.67	0.647	0.154
Job creation	4.84	0.234	0.421
Reduction in poverty level	4.67	0.442	0.426
Production on large scale for export	4.52	0.145	0.321
Production on large scale to reduce food importation	4.61	0.157	0.786
Farmers’ income increase as a result of production increase	4.70	0.676	0.365
Large scale production reduces per unit cost of production	3.87	0.187	0.324
Acquisition & use of modernised farming techniques	4.65	0.188	0.451
More tax revenue to government following income increase	3.84	0.243	0.316
Generation of sufficient revenue to repay loan	3.76	0.572	0.281

* Kruskal-Wallis test p value using Level of Education & Length of experience as grouping variables.

Based on the findings in Table 4, increased financial resources would allow farmers to: enhance their acquisition of resource inputs and benefit from economies of scale in acquiring these resources. A rise in output would also lead to increased farm production, which would result in economies of scale in distribution. More funding would enable farmers to adopt modern farming techniques suited for large-scale production. This increase in production capacity should lead to several positive outcomes: job creation, poverty alleviation, a rise in exports, foreign currency earnings, and an improved trade balance due to reduced food exports. Farmers’ income would grow, making it easier for them to repay loans, while the government would also see an increase in tax revenue. We examined farmers’ perceptions of these outcomes, using education level and experience as grouping variables. The p-values for all variables in Table 4 for both grouping factors exceed 0.05, indicating a broad consensus among farmers regarding the outcomes of financial inclusion and increased access to finance in agriculture. Overall, improving farmers’ access to finance should result in positive changes in the agricultural sector and the broader economy. The correlation results in Table 5, which controlled for education level, farm size, and years of experience, show strong, significant, and positive relationships among the variables, confirming their interconnectedness in fostering sustainable development. This outcome further emphasizes the synergistic benefits that financial inclusion could bring to the agricultural sector.

In Table 4, regarding the perceived outcomes of financial inclusion, all p-values exceed 0.05, meaning there is no statistically significant difference in farmers’ perceptions of the effects of greater access to finance in agriculture at the 5% significance level. Thus, we accept the alternative hypothesis (H1), which suggests that financial inclusion in Nigeria’s agricultural sector can promote sustainable development.

5 | CONCLUSION

The scale of agricultural operations is determined by the availability of capital, which is directly linked to access to finance. Therefore, achieving the full tax benefits from agricultural business is contingent upon financial access. Based on farmers’ belief that financial inclusion in the sector can drive sustainable development, it is crucial to address the challenges of financial inclusion. This includes establishing more financial institutions in rural areas to make financial services more accessible and provide opportunities for better monitoring of farmers, thus reducing the risk of fund misuse and loan defaults. Financial products tailored to farmers’ specific needs—such as the nature of their farming, crop maturity periods, and socioeconomic status—should be developed. These factors should also influence interest rates and repayment schedules. Implementing these strategies would increase farmers’ access to affordable credit while mitigating the risk of repayment defaults. Achieving financial inclusion is a shared responsibility between the government, financial institutions, and farmers. Farmers must remain financially disciplined, maintain proper records, manage funds effectively, increase their financial literacy, and stay informed about sector developments. Additionally, deregulating agricultural insurance and encouraging private sector involvement is recommended, as it would benefit Nigeria’s economy.

5.1 | Policy Recommendations

Based on the findings of the study, the following recommendations are given:

- The federal government should encourage commercial banks to give sufficient credit facilities to the Agricultural sector through moderate bank lending rates for ease of farming business in Nigeria.
- Proactive campaign on the availability of credit facilities for farmers to enable them to have access to loans at a single-digit interest rate. This could be achieved through social media, door-to-door vibes, town hall meetings and market square awareness etc.
- Government should create an enabling environment for farmers through the provision of adequate security, pest control measures and seedlings.

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