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(Review Article)

Financial inclusion and impacts on agriculture in Delta State, Nigeria

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Abstract

The study appraised financial inclusion and impacts on agriculture in Delta State, Nigeria. Delta State, located in the southern region of Nigeria, is known for its rich agricultural potential. Agriculture is a major source of livelihood for the majority of its population, contributing significantly to both food security and economic growth. Nigeria introduced National Financial Inclusion Strategy (NFIS) in 2012. Besides, interventions of financial inclusion packages in Nigeria by some corporate financial inclusion organizations include: Agent Banking and Mobile Money, Nigeria Incentive-Based Risk Sharing System for Agricultural Lending (NIRSAL), Financial Literacy and Education Programs, Agricultural Credit Guarantee Scheme Fund (ACGSF) and Microfinance Institutions (MFIs). These organizations impacted the Delta State agriculture in the areas of cassava farming, oil palm production, rice cultivation, poultry, fisheries and aquaculture, agribusiness and processing and agricultural diversity. Such Impacts were obvious in food security, poverty reduction, women's empowerment, market access and value chain integration, risk mitigation, access to agricultural inputs, income diversification and increased agricultural productivity. Noticeable financial inclusion challenges in Delta State's agricultural sector were limited access to financial services, insufficient financial literacy programmes and inadequate rural infrastructure. It was concluded that financial inclusion in agriculture in Delta State is a cornerstone for the state's economic development and the well-being of its citizens. Among the recommendations given, it was emphasized that strengthening financial education system should be prioritized in agriculture.

Keywords: Agriculture; Financial Inclusion; Financial Services; Impacts; Delta State

1. Introduction

Financial inclusion, defined as the accessibility and availability of financial services at an affordable cost to all individuals and businesses, has become a global priority. It is recognized as a key driver of economic development and poverty reduction. In the context of Delta State, achieving financial inclusion in the agricultural sector is crucial for improving the livelihoods of smallholder farmers, enhancing productivity, and fostering sustainable development (World Bank, 2018).

Delta State, located in the southern region of Nigeria, is known for its rich agricultural potential. Agriculture is a major source of livelihood for the majority of its population, contributing significantly to both food security and economic growth. However, despite its importance, the sector faces several challenges, including limited access to financial services and lack of inclusion in the formal financial system which invariably affects yield and performances (Emaziye, 2015).

This seminar provides an in-depth analysis of the background and context of financial inclusion and its relationship with agriculture in Delta State, Nigeria. Financial inclusion is a critical component of economic development, and its significance in the context of agriculture cannot be overstated, especially in a region like Delta State, where agriculture

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plays a pivotal role in the economy. This paper delves into the historical background of financial inclusion, its evolution in Nigeria, and the specific challenges and opportunities it presents in Delta State. It also discusses the various strategies and policies aimed at enhancing financial inclusion in the agricultural sector. The paper concludes with recommendations for further research to improve financial inclusion and bolster agricultural development in Delta State.

2. Overview of Financial Inclusion in Nigeria

The history of financial inclusion in Nigeria dates back to the establishment of formal financial institutions during the colonial era. The Central Bank of Nigeria (CBN) was established in 1958, with the primary objective of promoting monetary stability and a sound financial system. However, the focus on financial inclusion gained prominence in the early 2000s with the launch of various initiatives aimed at increasing access to financial services, particularly in rural areas.

One of the significant milestones in Nigeria's financial inclusion journey was the introduction of the National Financial Inclusion Strategy (NFIS) in 2012. The NFIS outlined a comprehensive framework to enhance access to financial services, reduce the exclusion rate, and promote financial literacy. It emphasized the importance of reaching underserved and unserved populations, including those engaged in agriculture.

3. Corporate Financial Inclusion Organizations

In Nigeria, the following include some Corporate Financial Inclusion Organizations:

National Financial Inclusion Strategy (NFIS): The NFIS is a comprehensive framework launched by the Central Bank of Nigeria (CBN) in 2012 to promote financial inclusion in Nigeria. It outlines specific targets and strategies to increase access to financial services and reduce the exclusion rate Central Bank of Nigeria. (2012).

Agent Banking and Mobile Money: Nigeria has witnessed the growth of agent banking and mobile money services, enabling individuals to access banking services through a network of agents and their mobile phones. Initiatives such as the CBN's Shared Agent Network Expansion Program (SANEF) have played a key role in expanding these services Akinlolu, & Esiyok, (2021).

Nigeria Incentive-Based Risk Sharing System for Agricultural Lending (NIRSAL): NIRSAL is a program designed to promote agricultural lending by mitigating the risks associated with agriculture. It provides guarantees and credit risk insurance to financial institutions to encourage lending to smallholder farmers and agribusinesses Nwosu, & Nwosu, (2019).

Financial Literacy and Education Programs: Various financial literacy and education programs have been implemented in Nigeria to enhance the financial capabilities of individuals. These programs aim to improve financial decision-making and promote responsible financial behavior Yusuf, & Jibril, (2020).

Agricultural Credit Guarantee Scheme Fund (ACGSF): The ACGSF provides guarantees to financial institutions to encourage them to lend to the agricultural sector. It facilitates access to credit for farmers and agribusinesses, supporting agricultural growth Yusuf, & Ahmed (2020).

Bank Verification Number (BVN) System: The BVN system is a unique identifier for bank customers in Nigeria, designed to curb fraud and improve the integrity of the financial system. It has helped in expanding access to financial services and enhancing security Adeyemo & Yusuff (2019).

Microfinance Institutions (MFIs): Microfinance institutions play a crucial role in providing financial services to underserved communities in Nigeria. These institutions focus on small loans, savings, and other financial products tailored to the needs of low-income individuals and micro-entrepreneurs Okojie & Egharevba, (2019).

Cooperative Financial Empowerment: Cooperative funding was given priority among farmers that identified with aquaculture in food security, Gbigbi, Achoja and Temile (2019).

4. Key Components of Financial Inclusion

The key components of Financial Inclusion include:

- Access to Formal Financial Services: The core component of financial inclusion is ensuring that individuals and businesses have access to formal financial services, such as savings accounts, payment services, credit facilities, insurance, and investment options. Access is crucial for participation in the formal financial system (Demirgüç-Kunt & Klappe 2012; Chuks-Okonta and Gbigbi, 2015).
- Affordability and Cost-Effectiveness: Financial inclusion should be affordable for all segments of the population. This means that the cost of using financial services should be reasonable and not a barrier to entry, especially for low-income individuals and communities (World Bank 2022). Emaziye and Ovharhe (2020) viewed affordability and cost-effectiveness as factors affecting economic analysis of price differentials and profitability in Agricultural commodities.
- Financial Literacy and Education: To effectively use financial services, individuals need to be financially literate. Financial education programs and initiatives play a vital role in improving financial literacy and helping people make informed financial decisions Cull, (Demirgüç-Kunt, & Morduch, 2018).
- Consumer Protection: Consumer protection mechanisms are essential to safeguard individuals against unfair practices and ensure the integrity of the financial system. Regulatory frameworks and policies should be in place to protect consumers' rights (Central Bank of Nigeria 2022)
- Digital and Technological Innovations: The advent of digital and technological advancements has transformed financial inclusion. Digital financial services, mobile banking, and fintech innovations have expanded access to financial services, especially in remote and underserved areas. Allen, Demirgüç-Kunt, Klapper, & Peria,. (2016).
- Infrastructure and Access Points: Physical infrastructure, such as banking branches and ATMs, as well as digital infrastructure like internet connectivity and mobile networks, are essential for providing access to financial services in both urban and rural areas Maity and Sahu (2023).
- Regulatory Environment: A supportive regulatory environment is crucial for financial inclusion. Regulations should balance the need for consumer protection with the promotion of innovation and competition within the financial sector (Duflo, 2012).
- Inclusion of Vulnerable and Marginalized Groups: True financial inclusion should not exclude any demographic group. Efforts should be made to include women, low-income individuals, rural populations, and other marginalized groups who may face additional barriers to access (Chibba, 2009)
- Innovation and Product Diversity: Financial inclusion is not just about access but also about the availability of diverse financial products that meet the unique needs of different customer segments.
- Data and Measurement: Accurate data and measurement tools are essential for tracking progress in financial inclusion and identifying areas that need improvement Beck, Demirgüç-Kunt and Honohan, 2009; and Gbigbi, 2017a).

5. Delta State Agricultural Sector

Delta State, located in the southern region of Nigeria, boasts a diverse and fertile agricultural landscape. Agriculture plays a significant role in the state's economy, providing employment, contributing to food security, and supporting livelihoods. Here is an overview of Delta State's major agriculture sector in crop husbandry:

5.1. Agricultural Diversity

Delta State's agricultural sector is characterized by a wide variety of crops, including oil palm, cassava, yam, rice, maize, vegetables, and cash crops such as rubber and cocoa. This diversity contributes to the state's food production and export potential (Federal Ministry of Agriculture and Rural Development 2020).

5.2. Oil Palm Production

Delta State is a major producer of oil palm in Nigeria. The oil palm industry supports both smallholder and large-scale commercial cultivation, making it a significant contributor to the state's economy (Oyinbo, Oyinbo, & Izekor, 2017).

5.3. Cassava Farming

Cassava is a staple crop in Delta State, providing a source of food security and income for many households. It is used in various culinary dishes and processed into products such as garri and starch (Ojukwu, & Onyemauwa 2014).

5.4. Rice Cultivation

Rice production has gained importance in Delta State due to efforts to enhance food self-sufficiency and reduce rice importation. The state promotes both rainfed and irrigated rice cultivation (Amaechi & Onwuka, 2014).

5.5. Poultry, Fisheries and Aquaculture

Poultry business is very promising in Delta State. Delta State's water bodies, including the Niger River and various tributaries, support a thriving fisheries and aquaculture industry. Catfish and tilapia farming are common practices (Okaeme, & Olajiire, 2019).

5.6. Agribusiness and Processing

The state is home to numerous agribusinesses engaged in processing agricultural products. This includes oil palm processing mills, cassava processing plants, and rice milling facilities, adding value to raw agricultural produce Okorji, & Enebeli-Uzor, (2016). 7. Challenges and *Opportunities:*

While Delta State's agriculture sector has great potential, it faces challenges such as inadequate infrastructure, access to finance, and post-harvest losses. However, there are opportunities for growth through investment, improved technology adoption, and sustainable practices Ekpebu, (2020).

6. Financial Inclusion Initiatives

The Delta State government, in collaboration with various stakeholders, has implemented several initiatives to promote financial inclusion in the agricultural sector. These initiatives include:

Establishment of Rural Financial Institutions: The state government has supported the establishment of rural banks and microfinance institutions to provide financial services in underserved areas.

Financial Literacy Programs: Numerous financial literacy programs have been organized to educate farmers on the benefits of formal financial services and responsible financial management (Yusuf, & Jibril 2020).

Mobile Banking and Digital Financial Services: The adoption of mobile banking and digital financial services has expanded access to financial services, especially in remote areas.

7. Impacts of Financial Inclusion in Delta State

Financial inclusion has significant impacts on agriculture in Delta State, Nigeria. Access to financial services can enhance agricultural productivity, reduce poverty, and contribute to overall economic development. Here are some of the key impacts of financial inclusion on Delta State's agriculture:

Increased Agricultural Productivity: Financial inclusion provides farmers with access to credit, savings, and insurance services, enabling them to invest in improved farming practices, purchase high-quality inputs, and mitigate risks. This results in increased agricultural productivity (Yusuf & Ahmed 2020).

Income Diversification: Financial inclusion allows farmers to diversify their income sources by participating in non-farm activities or starting small businesses. This reduces their dependence on agriculture and increases household profitability (Emaziye and Ovharhe, 2021).

Access to Agricultural Inputs: Access to credit and financial services enables farmers to purchase improved seeds, fertilizers, pesticides, and machinery, leading to higher crop yields and better agricultural practices.

Risk Mitigation: Financial inclusion provides access to insurance products that protect farmers from losses due to natural disasters, pests, and crop failures. This risk mitigation enhances the resilience of agricultural livelihoods.

Market Access and Value Chain Integration: Improved access to financial services enables farmers to access formal markets and connect with agribusinesses, processors, and retailers. This integration adds value to agricultural products and increases income opportunities.

Poverty Reduction: Financial inclusion, by increasing agricultural income and diversifying livelihoods, contributes to poverty reduction in Delta State's rural areas, where a significant portion of the population depends on agriculture (World Bank 2017).

Women's Empowerment and Cooperative Development: Financial inclusion can empower women in agriculture by providing them with control over financial resources, enabling them to make decisions, access credit, and invest in their farming activities (Duflo, 2012; and Gbigbi, Achoja and Temile, 2019).

Food Security: Enhanced agricultural productivity resulting from financial inclusion contributes to food security in Delta State by ensuring a consistent supply of food for the local population. This was demonstrated by use of potato farming (Gbigbi, 2019).

8. Empirical Studies in Financial Inclusion

According to Umaru and Eshiozemhe (2022), increasing financial inclusion and boosting productivity are urgently needed on a worldwide scale. This study looks at how Nigerian agriculture is affected by the asymmetric effects of financial inclusion, which are reflected by the availability of ATMs, POS systems, mobile banking payments, and checks. The analysis makes use of quarterly data from 2010Q1 to 2021Q4 that was obtained from the Nigerian Inter-Bank Settlement System Plc (NIBSS) and the CBN's 2021 statistical bulletin. The study uses a non-linear Autoregressive Distributed Lag (NARDL) model and Stepwise Least Squares (STEPLS) technique to assess the correlations. The study's findings show that financial inclusion and agricultural output in Nigeria have a notable positive and statistically significant association, especially when you take into account the availability of automated teller machines (ATMs) and point-of-sale (POS) systems. As a result, we support strategic initiatives designed to raise agricultural productivity. We specifically advise that governmental organizations and monetary authorities increase the deployment of ATMs and POS systems, paying special attention to rural areas where agriculture is the main form of employment. Additionally, it is critical to increase internet connection in these rural areas. Such actions could increase agricultural productivity, promote economic expansion, and provide individuals with employment opportunities.

Ugbor *et al* (2018) looked at financial inclusion in Nigeria's agricultural sector for their 2018 study. The research approach included the use of survey data gathered through the distribution of 600 questionnaires to farmers in both rural and urban areas of the nation. The study established two unique indices—the Adequacy Gap Index and the Timeliness Gap Index—to measure the degree of financial inclusion. These indices were created using the Pecking Order Theory to measure the penetration gap in the context of financial inclusion. The Adequacy and Timeliness Gap Indices results showed a worrying trend: formal lending institutions have trouble rapidly and adequately supplying small-scale farmers' loan needs, particularly because of their reliance on rain-fed agriculture techniques. The Penetration Gap Index, a significant finding of the study, made clear that financial inclusion in Nigeria's agriculture sector was still only at a relatively low level. The report made a number of recommendations in light of these findings, the most important of which was that the government should step up efforts to meet the credit needs of farmers in a timely and adequate manner. Such actions are essential for advancing financial inclusion in the agriculture sector, which will ultimately promote the nation's economic growth and stability.

In their study Onah et al (2018) put forth the notion that enhancing the efficiency and performance of cooperative societies hinges on improving the affordability and accessibility of financial products and services tailored for these cooperative entities. However, it is worth noting that in developing nations, there has been a dearth of comprehensive research endeavors aimed at assessing the factors impeding the financial inclusion of cooperative societies. In pursuit of uncovering the obstacles and potential avenues for enhancing the financial inclusion of farmers' cooperative societies, this study conducted a thorough analysis based on responses from a sample of 240 participants selected through a multi-stage sampling procedure. The analytical techniques employed encompassed frequency analysis, mean calculation, t-test examination, binary logit regression modeling, and exploratory factor analysis (principal component analysis). An examination of the level of credit access from both formal and informal credit institutions revealed that a significant proportion of respondents did not have access to credit from either source. Furthermore, the binary logit regression model designed to identify the determinants of credit access pinpointed several variables that exhibited a significant relationship with formal credit access. These variables included factors such as proximity to access points, collateral availability, savings behavior, duration of existence, concealed charges, repayment timelines, the presence of an account officer, and financial literacy. As a constructive recommendation, it is advised that farmers' cooperative societies consider augmenting their equity capital through the establishment of mechanisms that encourage savings among their members and facilitate the acquisition of additional shares. Such measures can potentially bolster the financial strength of these cooperative entities and improve their access to credit, thereby fostering their overall growth and sustainability

In 2021, Enhancing Financial Innovation & Access (EFInA) highlighted that farmers constitute the largest segment of financially excluded individuals in Nigeria, underscoring a notable gap in the availability of financial resources for the agricultural sector. The presence of adequate financing holds the potential to significantly enhance agricultural output and productivity, ultimately contributing to poverty reduction. This research embarks on an empirical investigation into the impact of financial inclusion on agricultural productivity within Nigeria. The study leverages the Living Standards Measurement Study–Integrated Surveys on Agriculture (LSMS-ISA), a novel dataset encompassing information on agricultural households, including their agricultural practices and engagement in various financial activities such as banking, savings, and insurance. Capitalizing on the dataset's multi-period nature with observations spanning three distinct time periods, the study utilizes panel data estimation methods to analyze the relationship. Empirical findings from this study elucidate that financial inclusion, regardless of the metric employed for measurement, exerts a positive and statistically significant influence on agricultural productivity in Nigeria. While much research has delved into the impact of finance on broad macroeconomic indicators, this study fills a critical gap by shedding light on the effects of finance at the household and individual levels. It underscores the importance of explicitly considering financial inclusion when examining the consequences of financial access for individuals and households. In doing so, this research advances our understanding and offers fresh insights into the ramifications of financial inclusion on the economic activities of agricultural households in Nigeria.

9. Policy and Regulatory Issues

Below are some policy and regulatory issues related to the financial inclusion of agriculture in Delta State

- Regulatory Environment for Digital Financial Services:
- *Issue*: Creating an enabling regulatory environment for digital financial services, including mobile money and digital payments, is essential for expanding financial inclusion in agriculture (World Bank 2014).
- Interest Rate Regulation:
- *Issue*: Balancing the need for affordable agricultural credit with the sustainability of financial institutions is a challenge. Interest rate regulation can impact the availability of credit to farmers (Beck & Cull 2014).
- Agricultural Insurance Regulation:
- *Issue*: Regulatory frameworks for agricultural insurance need to be conducive to the development of affordable and accessible insurance products for farmers (Gbigbi and Ikechukwuka, 2020).
- Consumer Protection Regulations:
- *Issue*: Ensuring that farmers have adequate protection from unfair financial practices and fraud is vital for building trust in financial services (Klapper, Lusardi & Panos 2013).
- Credit Information Sharing Regulations:
- *Issue*: Policies related to credit information sharing can impact farmers' access to credit, as they rely on their credit history and reputation (World Bank, 2012)
- Rural Branching Regulations:
- *Issue*: Regulatory requirements for the establishment of bank branches in rural areas can affect the physical accessibility of financial services for farmers (Cull & Xu, 2018)
- Financial Inclusion Strategies:
- *Issue*: The formulation and implementation of national financial inclusion strategies that explicitly target the agricultural sector are essential for prioritizing agricultural financial inclusion (Claessens, Feijen, and Laeven, 2008).
- Cross-Border Financial Inclusion:
- *Issue*: Regulations governing cross-border financial services can impact the ability of rural farmers to access financial products and services offered by institutions outside their home country (Allen and Carletti 2008).
- Agricultural Credit Guarantee Schemes:
- *Issue*: Governments often establish credit guarantee schemes to encourage financial institutions to lend to farmers. The design and implementation of such schemes require effective regulation (Beck, Demirgüç-Kunt and Maksimovic 2005).
- Data Privacy and Security Regulations:
- *Issue*: Protecting the privacy and security of farmers' financial information is crucial for building trust in digital financial services (Donner and Tellez, 2008).

10. Financial Inclusion Challenges in Delta State's Agricultural Sector:

Limited Access to Financial Services: Smallholder farmers often lack access to formal financial institutions. This is exacerbated by the presence of informal lending practices, which can lead to exploitation and financial vulnerability (Gbigbi, 2017b).

Lack of Financial Literacy: Many farmers in the state have limited financial literacy, making it challenging for them to navigate formal financial services effectively

Inadequate Rural Infrastructure: Rural areas often suffer from poor infrastructure, including banking facilities. This lack of physical access to banks hinders financial inclusion efforts.

11. Financial Inclusion Lessons Learnt and Best Practice

Lessons learned and best practices from financial inclusion in agriculture can provide valuable insights for policymakers, practitioners, and stakeholders:

- Tailored Financial Products:
  - *Lesson Learned:* Customized financial products, such as agricultural loans with flexible repayment schedules, are more likely to meet the specific needs of farmers.
  - *Best Practice:* Financial institutions should design and offer products that consider the seasonal and cash flow patterns of agricultural activities.
- Digital Financial Services:
  - *Lesson Learned:* Digital platforms, including mobile banking and mobile money, can improve access to financial services in remote agricultural areas.
  - *Best Practice*: Investment in digital infrastructure and partnerships with telecom companies can facilitate the adoption of digital financial services.
- Financial Literacy and Education:
  - *Lesson Learned:* Lack of financial literacy can hinder the effective use of financial services by farmers.
  - *Best Practice:* Financial literacy programs should be integrated into financial inclusion initiatives to empower farmers to make informed decisions.
- Risk Mitigation and Insurance:
  - *Lesson Learned:* Farmers face various risks, including weather-related disasters and crop failures.
  - *Best Practice:* Offering agricultural insurance and risk mitigation products can help protect farmers from financial losses.
- Inclusive Value Chains:
  - *Lesson Learned*: Integrating smallholder farmers into agricultural value chains can enhance their income and market access.
  - *Best Practice:* Building partnerships with agribusinesses and processors to create inclusive value chains benefits both farmers and businesses.
- Collaboration and Partnerships:
  - *Lesson Learned:* Financial inclusion initiatives are more successful when stakeholders collaborate.
  - *Best Practice:* Governments, financial institutions, NGOs, and development organizations should work together to achieve common financial inclusion goals.
- Data and Technology Use:
  - *Lesson Learned:* Data analytics can help financial institutions better understand the needs of farmers.
  - *Best Practice*: Leveraging technology for data collection and analysis can lead to more effective targeting and product design.
- Regulatory Support:
  - *Lesson Learned*: Supportive regulatory frameworks are essential for the growth of financial inclusion in agriculture.
  - *Best Practice:* Regulators should create an enabling environment for financial institutions to offer agricultural financial services.
- Monitoring and Evaluation:
  - *Lesson Learned*: Continuous monitoring and evaluation of financial inclusion programs are crucial for measuring impact and making improvements.
  - *Best Practice*: Implementing robust monitoring and evaluation mechanisms ensures accountability and informs program adjustments.

- Women's Inclusion:
  - *Lesson Learned:* Women play a significant role in agriculture but often face gender-related barriers to financial inclusion.
  - *Best Practice:* Tailoring financial products and services to the specific needs of women farmers and promoting women's economic empowerment are essential.

In Nigeria, the Anchor Borrowers' Programme has provided credit and support to smallholder farmers, leading to increased agricultural productivity and food security. A similar empowerment is on-going by the Livelihood Improvement for Family Enterprises in the Niger Delta, LIFE-ND

12. Conclusion

In conclusion, financial inclusion in Delta State's agricultural sector is an ongoing process that holds immense potential for economic development. With concerted efforts and a focus on addressing the unique challenges faced by smallholder farmers, Delta State can harness its agricultural potential and achieve inclusive and sustainable growth. Financial inclusion in agriculture in Delta State is a cornerstone for the state's economic development and the well-being of its residents. It strengthens the agricultural sector, reduces poverty, empowers communities, and fosters sustainable growth. As such, policymakers and stakeholders should continue to prioritize efforts to enhance financial inclusion in Delta State's agricultural landscape. Financial inclusion is not merely a matter of expanding access to financial services; it is a catalyst for socioeconomic development and poverty alleviation. Robust scientific evidence underscores its significance in promoting individual and community well-being while fostering economic growth and stability. These developments and trends reflect the ongoing evolution of financial inclusion in agriculture, driven by the need to enhance the financial resilience of farmers, promote sustainable agriculture, and leverage technology to bridge the gap between farmers and formal financial services. Successful implementation of these trends will depend on collaboration among various stakeholders and adaptability to changing agricultural and economic conditions.

Implementing these strategies in Delta State's agriculture sector will require the collaboration of government agencies, NGOs, private sector partners, and local communities. Continuous monitoring, evaluation, and adaptation of strategies based on local conditions and feedback from farmers will be crucial for achieving sustainable and inclusive growth in agriculture.

Recommendations

Financial inclusion in Delta State's agricultural sector is pivotal for economic growth and poverty reduction. While significant strides have been made, challenges persist, requiring continued efforts from policymakers, financial institutions, and development organizations. To enhance financial inclusion in the agricultural sector of Delta State, the following recommendations are proposed:

- *Strengthening Financial Education*: Continuous financial education programs should be organized to enhance the financial literacy of smallholder farmers.
- *Infrastructure Development*: Investments in rural infrastructure, including roads and internet connectivity, are essential to improve physical access to financial services.
- *Collaboration:* Public-private partnerships and collaboration among stakeholders can promote the development of tailored financial products and services for farmers.
- *Monitoring and Evaluation*: Regular monitoring and evaluation of financial inclusion initiatives are necessary to assess their impact and make necessary adjustments.

Compliance with ethical standards

Disclosure of conflict of interest

Disclosure of conflict of interest: no conflict of interest to be disclosed.

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