Can Agricultural Financing Enhance Food Security? Evidence from Cross River State Rice Programme (2015-2023)

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Abstract
Agricultural financing has become an indispensable component of agricultural development and food security, particularly in developing countries where limited access to financial resources constrains farm productivity. Despite Nigeria's vast agricultural potential, food insecurity remains pervasive due to inadequate funding, weak institutional support, and poor access to agricultural credit. This study examined whether agricultural financing enhances food security using evidence from the Cross River State Rice Programme between 2015 and 2025. Specifically, the study explored stakeholders' perceptions of the influence of agricultural financing on food availability, affordability, and stability, and assessed the extent to which access to agricultural credit has enhanced rice production. The study was anchored on Agricultural Development Theory, which emphasizes the role of finance as a catalyst for agricultural transformation and food security. A qualitative case study design was adopted. Data were collected through Key Informant Interviews, Focus Group Discussions, and documentary sources involving officials of agricultural agencies, cooperative leaders, rice farmers, processors, marketers, and consumers. Data were analysed using thematic content analysis. Findings revealed that agricultural financing contributed to increased rice production, improved food availability, enhanced household access to food through higher incomes, strengthened food stability, and promoted cooperative participation. Access to agricultural credit was also found to facilitate farm expansion, technology adoption, and increased productivity. However, challenges such as delayed fund disbursement, bureaucratic bottlenecks, inadequate loan amounts, and limited access to credit constrained programme effectiveness. The study concludes that agricultural financing remains a critical driver of food security and recommends expanding access to affordable agricultural credit, strengthening cooperative institutions, and improving the efficiency of financing delivery mechanisms.

Keywords: Agricultural Credit, Agricultural Development, Agriculture Financing, Cross River State Rice Programme, Food Security, Rice Production

Introduction

Agriculture remains a critical driver of economic development, employment generation, poverty reduction, and food provision across the world. In Nigeria, the sector continues to play a significant role in rural livelihoods, employing about 60 percent of the workforce and providing opportunities for income generation and economic sustenance (Manyong *et al.*, 2016). The country is endowed with vast arable land, favourable climatic conditions, fertile soils, and abundant water resources that support diverse agricultural activities. Despite these advantages, Nigeria has struggled to translate its agricultural potential into sustainable food security.

Historically, agriculture constituted the backbone of the Nigerian economy before the emergence of crude oil. During the 1960s and early 1970s, Nigeria ranked among the world's leading producers and exporters of cocoa, palm oil, rubber, cotton, and groundnuts. However, the discovery of oil shifted government attention away from agriculture, resulting in declining investment, policy inconsistency, corruption, and weak institutional support for the sector (Abang & Ayamba, 2021). Consequently, agricultural productivity declined steadily, undermining the country's capacity to meet domestic food demands. Today, Nigeria remains heavily dependent on food imports despite its vast agricultural resources, while food production continues to lag behind population growth (FMARD, 2017).

The resulting food insecurity has become a major development concern. Food security entails ensuring that all people have access at all times to sufficient, safe, and nutritious food for healthy living. Yet, rising population growth, declining agricultural productivity, and increasing food demand have widened the gap between food supply and consumption in many developing countries, including Nigeria. Matemilola and Elegbede (2017) observe that poverty and food insecurity have persisted in Nigeria since the 1980s. Similarly, FAO (2018) reported that approximately 9.1 million Nigerians were undernourished between 2004 and 2006, while FAO (2019) indicated that the figure rose to about 25.6 million between 2016 and 2018. These trends underscore the urgency of adopting measures capable of increasing agricultural productivity and improving food availability.

One of the most important mechanisms for improving agricultural productivity is financing. Agricultural financing enables farmers to acquire improved seedlings, fertilizers, mechanized equipment, irrigation facilities, storage infrastructure, and other productivity enhancing technologies. It also facilitates expansion of cultivated land, improves post-harvest management, and strengthens participation in agricultural value chains. Consequently, inadequate access to finance has been widely identified as a major impediment to agricultural growth and food security in developing economies. Despite various agricultural interventions, Nigeria continues to face challenges arising from inadequate funding, poor implementation, policy discontinuity, and weak institutional coordination. Nwozor *et al.* (2019) note that the country has consistently fallen short of the Comprehensive African Agricultural Development Programme recommendation of allocating at least 10 percent of public expenditure to agriculture.

In response to these challenges, the Cross River State Rice Production Programme was established in 2015 as part of broader efforts to diversify the economy and enhance domestic food production. The programme sought to stimulate rice production through the provision of land, mechanization services, storage facilities, technical support, and financial assistance to farmers. By organizing farmers into cooperatives and guaranteeing market access through off taker arrangements, the programme was expected to increase rice output, improve farmers' incomes, enhance food availability, and contribute to food security. However, the extent to which agriculture financing under the programme has translated into tangible food security outcomes remains unclear. Although studies have examined agricultural development and economic growth (Navarro, 2017; Smith, 2018; Popoola, 2018), limited attention has been devoted to evaluating the contribution of agriculture financing to food security within the context of state level agricultural programmes. It is against this backdrop that this study examines whether agriculture financing can enhance food security using evidence from the Cross River State Rice Programme between 2015 and 2026.

Statement of the problem

Food security remains a major developmental challenge in Nigeria despite the country's vast agricultural resources and potential. A nation that once relied heavily on agriculture now struggles to produce sufficient food for its growing population. The decline of the agricultural sector following the emergence of crude oil as the dominant source of national revenue has contributed to increasing food insecurity, rising food importation, rural poverty, and declining agricultural productivity (Frank, 2012). This situation is particularly evident in the rice subsector, where Nigeria remains Africa's largest consumer of rice while simultaneously ranking among the world's largest rice importers (Ojo *et al.*, 2019). According to FAO (2019), local production stood at approximately four million metric tonnes in 2018, yet the country imported about five million metric tonnes annually, reflecting a significant production deficit.

In response to growing food security concerns, governments at various levels have implemented agricultural programmes aimed at increasing food production and improving farmers' welfare. One such initiative is the Cross River State Rice Programme, established in 2015 to promote rice production through financing, mechanization, storage facilities, land access, and market support. The programme was expected to enhance productivity, increase farmers' incomes, and strengthen food security. However, concerns remain regarding the extent to which these financing interventions have achieved their intended objectives. Farmers continue to face challenges such as inadequate access to credit, insufficient farm inputs, poor storage facilities, weak extension services, and implementation bottlenecks. While previous studies have examined agricultural development and economic growth, limited empirical attention has been devoted to the relationship between agriculture financing and food security within state driven rice production programmes. This gap necessitates an assessment of whether agriculture financing under the Cross River State Rice Programme has enhanced food availability, accessibility, and stability between 2015 and 2023.

Objective of the study

The objectives of the study are:

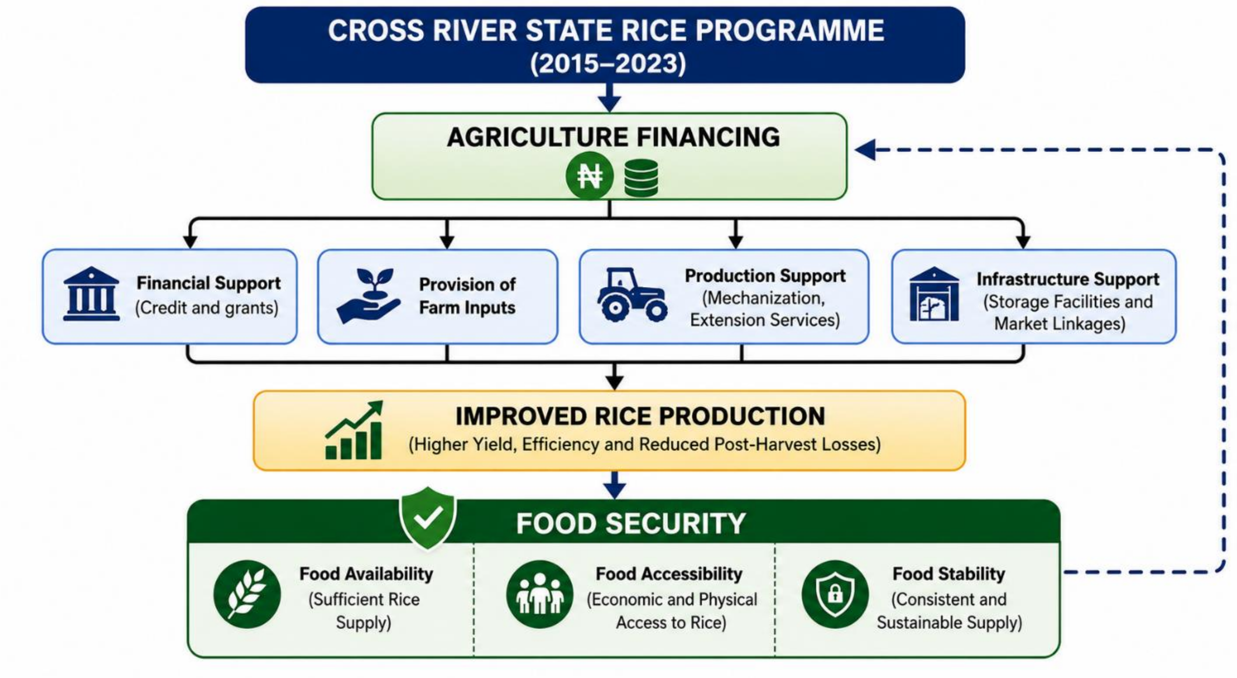
i. To examine stakeholders' perceptions of how agricultural financing under the Cross River State Rice Programme has influenced food availability, affordability, and stability.
ii. Assess the extent to which access to agricultural credit has enhanced rice production under the Cross River State Rice Programme.

Research questions

The study seeks to answer the following questions:

i. What are stakeholders' views regarding the impact of agricultural financing on food availability, affordability, and stability under the Cross River State Rice Programme?
ii. To what extent has access to agricultural credit enhanced rice production under the programme?

Conceptual framework



Source: Researcher's configuration, 2026

This study is anchored on the premise that agriculture financing is a critical determinant of food security. Agricultural financing provides farmers with the financial resources required to acquire improved seedlings, fertilizers, farm machinery, storage facilities, and other inputs necessary for increased agricultural productivity. Within the context of the Cross River State Rice Programme, financing and access to agricultural credit constitute strategic interventions designed to enhance rice production and improve farmers' productive capacity.

The framework assumes that when farmers have access to adequate financial support, they are able to expand cultivation, adopt improved technologies, increase output, reduce post-harvest losses, and improve the efficiency of rice production. Increased rice production is expected to enhance food availability, improve access to food through higher incomes, and contribute to food stability through sustained supply. Consequently, agriculture financing serves as the independent variable, while food security represents the dependent variable.

The study therefore conceptualizes a direct relationship between agriculture financing and food security, with rice production serving as the mechanism through which financing translates into improved food outcomes. The framework posits that increased access to agricultural credit and other financing opportunities under the Cross River State Rice Programme will lead to higher rice production and, ultimately, improved food security in Cross River State and Nigeria at large.

Literature review

Agricultural financing has emerged as a critical factor in the quest to achieve food security in Nigeria. As the agricultural sector remains the primary source of livelihood for a substantial proportion of the population, especially in rural communities, access to adequate financial resources is essential for improving productivity, expanding production capacity, and ensuring sustainable food availability. Agricultural finance encompasses all forms of financial support available to farmers and agribusiness operators, including credit facilities, savings, insurance services, grants, transfers, and investments required for production, processing, storage, and marketing activities (Oyetade & Shiri, 2014; Peter & Lyndon, 2015). The availability of such financial resources enables farmers to acquire improved inputs, adopt modern technologies, and enhance overall farm efficiency.

The significance of agricultural financing has become more pronounced in the face of increasing food demand arising from rapid population growth. Meeting this growing demand requires the adoption of modern farming techniques and productivity-enhancing technologies, which are often capital intensive. However, inadequate access to finance continues to constrain agricultural development in many developing countries, including Nigeria. Jelilov (2016) observed that lack of working capital and low liquidity limit farmers' ability to purchase improved seeds, fertilizers, pesticides, and storage facilities. Similarly, Ayegba and Ikani (2013) found that farmers with access to formal credit generally record higher production efficiency than those without such access, underscoring the importance of agricultural credit in breaking the cycle of rural poverty and improving food production.

Empirical studies have consistently linked agricultural financing with improved food security outcomes. Tarasov (2013), using evidence from Ethiopia, attributed low agricultural productivity to inadequate financing, poor irrigation systems, small farm holdings, and limited adoption of modern technologies. The study argued that access to finance stimulates agricultural investment, promotes the use of improved inputs, and ultimately increases farm output. In a similar vein, Udah and Nwachukwu (2015) identified inadequate financing as a major factor responsible for low agricultural productivity among smallholder farmers. According to the authors, access to credit enables farmers to invest in improved farming methods, acquire modern equipment, and increase agricultural output.

The importance of agricultural financing is further reinforced by Oyaniran (2020), who maintained that timely access to credit enables farmers to procure essential farm inputs and machinery required for efficient agricultural operations. This position aligns with the argument of Olutoye and Olutoye (2014), who emphasized that finance is indispensable for agricultural modernization because technological innovations can only be adopted when farmers possess sufficient capital. They noted that inadequate capital accumulation among small-scale farmers often limits investment opportunities and constrains agricultural growth. Likewise, Oguwuike (2018) described agricultural credit as a vital instrument for agricultural development in developing economies.
Evidence from Cross River State also demonstrates the relevance of agricultural financing to food security. Yusuf and Tenon (2019) reported that microcredit facilities enabled rice farmers in the state to acquire critical production inputs and improve productivity. Although the study noted instances of credit diversion, the findings generally support the proposition that access to finance can enhance agricultural performance when properly utilized.

Furthermore, the Federal Ministry of Agriculture and Rural Development (2019) identified several pathways through which agricultural financing contributes to food security, including increased rural incomes, lower food prices, employment generation, poverty reduction, and broader economic transformation. These mechanisms suggest that agricultural financing not only improves farm productivity but also strengthens household access to food and enhances overall food system sustainability.

Drawing from the foregoing literature, it is evident that agricultural financing remains a strategic driver of food security. Improved access to financial resources enhances farmers' capacity to adopt modern production practices, increase output, and contribute meaningfully to national food sufficiency. Consequently, examining the role of agricultural financing in the implementation of rice development programmes provides valuable insight into strategies for addressing food insecurity in Cross River State and Nigeria at large.

Theoretical framework

This study is anchored on the Agricultural Development Theory (ADT) propounded by George Norton, William Masters, and Jeffrey Alwang. The theory explains how agricultural transformation can be achieved through the interaction of productive resources, effective government policies, institutional support, modern technology, and adequate financing. According to Norton, Masters, and Alwang (2016), agricultural development is a critical pathway for socioeconomic advancement, particularly in developing countries where agriculture remains the dominant source of livelihood and food supply.

Agricultural Development Theory posits that agricultural growth does not occur automatically but is stimulated through deliberate policy interventions designed to improve farmers' productive capacity. The theory emphasizes that access to productive resources such as land, capital, technology, improved inputs, extension services, and markets determines the level of agricultural output. It argues that governments and development agencies have a responsibility to create an enabling environment through supportive policies, programmes, and institutional frameworks capable of enhancing agricultural productivity and improving food availability.

A central proposition of the theory is that finance serves as a catalyst for agricultural development. Adequate funding enables farmers to acquire improved seedlings, fertilizers, agrochemicals, mechanized equipment, irrigation facilities, storage infrastructure, and other modern technologies required for increased productivity. The theory maintains that where farmers have access to affordable credit and other forms of financial support, they are more likely to expand production, adopt innovations, improve efficiency, and increase output. Consequently, enhanced agricultural productivity translates into increased food availability, higher rural incomes, poverty reduction, and improved food security.

Another important assumption of the theory is that farmers operating within traditional agricultural systems are rational economic actors who respond positively to incentives. When provided with adequate financial resources, technical support, and access to modern technologies, they are capable of increasing production and contributing significantly to national development. The theory therefore views agricultural financing not merely as a source of capital but as a strategic instrument for stimulating agricultural modernization and sustainable food production.

Furthermore, Agricultural Development Theory recognizes the importance of institutions in promoting agricultural growth. Effective implementation of agricultural programmes requires strong institutional arrangements capable of ensuring efficient allocation of resources, monitoring programme activities, and facilitating farmers' access to financing opportunities. Thus, the success of agricultural interventions depends largely on the extent to which financial support is complemented by sound policies, technical assistance, and institutional effectiveness.

The relevance of Agricultural Development Theory to this study lies in its explanation of how agricultural financing can enhance food security through increased agricultural productivity. The theory provides a suitable framework for understanding the objectives of the Cross River State Rice Programme, which seeks to improve rice production through financial support, credit facilities, mechanization services, and other agricultural interventions. It supports the study's proposition that access to agricultural financing enables farmers to acquire productive inputs, increase rice output, improve income levels, and ultimately strengthen food security. Consequently, the theory offers a logical basis for examining the impact of agricultural financing and agricultural credit on food security under the Cross River State Rice Programme between 2015 and 2023.

Methodology

Research Design

This study adopted a qualitative case study design. The qualitative approach was considered appropriate because the study sought to obtain an in depth understanding of how agricultural financing under the Cross River State Rice Programme has influenced food security outcomes in Cross River State between 2015 and 2023. Unlike quantitative approaches that emphasize numerical measurement, the qualitative design enabled the researcher to explore the experiences, perceptions, and insights of key stakeholders regarding the contribution of agricultural financing to food availability, affordability, and stability. The case study approach was particularly suitable because it facilitated a detailed examination of the Cross River State Rice Programme as a specific agricultural intervention within its real-life context.

Study Area

The study was conducted in Cross River State, Nigeria. The state is predominantly agrarian and possesses favourable ecological conditions for rice cultivation. Major rice producing areas include Abi, Biase, Obubra, Bekwarra, Ogoja, and Yala Local Government Areas. The selection of the state was informed by the establishment of the Cross River State Rice Programme in 2015, which was designed to enhance rice production through financial support, mechanization services, extension support, storage facilities, and market linkages.

Participants and Sampling Technique

The study utilized purposive sampling to select participants who possessed relevant knowledge and experience regarding the implementation and outcomes of the Cross River State Rice Programme. Participants comprised officials of the Cross River State Ministry of Agriculture, officials of the Cross River State Agricultural Development Programme (CRADP), executives of rice farmers' associations, cooperative leaders, rice farmers, rice processors, rice marketers, and selected consumers. These categories of participants were considered appropriate because they provided perspectives on agricultural financing, rice production, market accessibility, affordability, and food availability.

A total of twenty-five participants were selected for the study. The sample size was guided by the principle of data saturation, whereby interviews continued until no substantially new information emerged.

Sources and Methods of Data Collection

Both primary and secondary sources of data were utilized. Primary data were collected through Key Informant Interviews (KIIs) and Focus Group Discussions (FGDs). Key informant interviews were conducted with government officials, programme administrators, cooperative leaders, and agricultural extension personnel. Focus group discussions were conducted with rice farmers, processors, marketers, and consumers across selected rice producing communities.

Secondary data were obtained from policy documents, programme reports, agricultural statistics, food security reports, government publications, academic journals, and reports from relevant national and international organizations. Particular attention was paid to documents containing information on rice production levels, market prices, household access to rice, and the stability of rice supply during the period under review.

Research Instruments

The principal instruments for data collection were interview guides and focus group discussion guides developed in line with the objectives of the study. The interview guides contained open ended questions designed to elicit detailed information on the nature of agricultural financing, access to credit facilities, challenges encountered by beneficiaries, and perceived impacts on food availability, affordability, and stability. The guides also explored stakeholders' assessments of the successes and limitations of the Cross River State Rice Programme.

Trustworthiness of the Study

To ensure the credibility and trustworthiness of the findings, the study employed triangulation of data sources and methods. Information obtained from interviews was cross checked with focus group discussions and documentary evidence. Member checking was also conducted by seeking clarification from selected participants on issues arising from the interviews. Furthermore, detailed records of interviews and field notes were maintained to enhance dependability and confirmability.

Method of Data Analysis

Data generated from interviews and focus group discussions were transcribed, organized, and analysed using thematic content analysis. The analysis involved coding participants' responses, identifying recurring themes, categorizing emerging patterns, and interpreting findings in relation to the study objectives. Themes were developed around agricultural financing, access to credit, rice production, food availability, food affordability, and food stability. Documentary evidence was used to complement and validate the interview findings.

Ethical Considerations

Ethical principles governing social science research were strictly observed throughout the study. Informed consent was obtained from all participants prior to data collection. Participation was voluntary, and respondents were assured of confidentiality and anonymity. Information obtained during the study was used solely for academic purposes, and participants were informed of their right to withdraw from the study at any stage without penalty.

Result

This section presents the findings of the study based on data obtained from Key Informant Interviews (KIIs), Focus Group Discussions (FGDs), and documentary evidence relating to the Cross River State Rice Programme. The data were analysed using thematic content analysis. Emerging themes were identified, coded, and organized in accordance with the objectives and research questions of the study. The findings provide insights into stakeholders' perceptions of the influence of agricultural financing on food security and the extent to which access to agricultural credit has enhanced rice production in Cross River State between 2015 and 2023.

i.) Theme One: Stakeholders' Perceptions of the Influence of Agriculture Financing on Food Security

The first objective sought to examine stakeholders' perceptions regarding how agricultural financing under the Cross River State Rice Programme has influenced food availability, affordability, and stability. Analysis of responses from farmers, cooperative leaders, programme administrators, extension officers, processors, marketers, and consumers revealed a widespread perception that agricultural financing contributed positively to food security outcomes. However, participants also emphasized that the effectiveness of financing interventions depended largely on accessibility, adequacy, timeliness, and institutional support mechanisms.

a.) Increased Food Availability through Enhanced Agricultural Production

A dominant theme that emerged across virtually all categories of respondents was that agricultural financing increased food availability by stimulating rice production. Farmers consistently reported that financial assistance enabled them to expand cultivated land, purchase improved farm inputs, hire labour, and undertake farming operations more efficiently than before.

Participants noted that prior to the introduction of financing opportunities under the programme, many smallholder farmers operated on a subsistence scale due to inadequate capital. Access to financial support was therefore viewed as a major factor that enabled increased production and improved output.

A rice farmer from Abi Local Government Area observed:

"Before the programme, many of us cultivated only small portions of land because we lacked the money to buy inputs and employ labour. The support we received encouraged us to increase our production."

Similarly, officials of the Cross River State Agricultural Development Programme indicated that the programme contributed significantly to increasing rice cultivation across major rice producing communities. According to the respondents, the availability of financing encouraged greater participation in rice farming and improved the capacity of farmers to undertake larger production activities.

Documentary evidence reviewed during the study further indicated an upward trend in rice production during the implementation period, suggesting that financing interventions contributed to expanding food supply within the state.

b.) Improved Household Access to Food

Another recurring theme was that increased agricultural production improved household access to food.

Participants argued that improved rice output translated into higher incomes for farmers, thereby enhancing their purchasing power and ability to meet household nutritional needs.

Many farmers stated that increased earnings from rice cultivation enabled them to purchase other food items, invest in children's education, access healthcare services, and improve their overall standard of living. This finding suggests that the benefits of agricultural financing extended beyond production to broader household welfare outcomes.

A cooperative executive explained:

"When farmers harvest more rice and earn more income, they are able to feed their families better and take care of other household responsibilities."

Focus group participants similarly noted that increased agricultural income reduced vulnerability to food shortages and strengthened household food security.

c.) Perceived Improvement in Food Affordability

The study further revealed that stakeholders perceived agricultural financing as contributing to improved food affordability through increased rice supply. Respondents argued that when production increased, market supply also expanded, thereby moderating prices during harvest periods.

Rice marketers interviewed indicated that locally produced rice became more readily available in local markets following increased production under the programme. Consumers participating in focus group discussions also acknowledged that rice was relatively more accessible during periods of high production.

A rice trader in Ogoja remarked:

"When production increases, the quantity available in the market also increases. This usually helps to stabilize prices and makes rice more affordable for consumers."

However, several respondents cautioned that affordability gains were sometimes undermined by inflationary pressures, rising transportation costs, fluctuating input prices, and broader macroeconomic conditions. Thus, while financing improved production, external economic factors occasionally limited its impact on consumer prices.

d.) Enhanced Food Stability and Supply Sustainability

Food stability emerged as another important dimension through which agricultural financing influenced food security. Respondents generally agreed that access to finance encouraged continuity in agricultural production and reduced seasonal fluctuations in food supply. Participants reported that financing support enabled farmers to prepare adequately for subsequent planting seasons, thereby promoting sustained production cycles. Some respondents indicated that financial support enhanced resilience against production shocks by facilitating the acquisition of improved technologies and farm management practices.

An extension officer noted:

"Farmers who have access to financing are usually better prepared for the next farming season because they can plan ahead and invest in necessary inputs."

Government officials further emphasized that financing interventions strengthened production sustainability by reducing the likelihood of farm abandonment resulting from financial constraints.

e.) Strengthening Cooperative Participation and Collective Action

An unexpected but significant finding was the role of agricultural financing in strengthening cooperative participation. Many respondents indicated that access to programme benefits was facilitated through cooperative societies and farmers' associations. Participants reported that cooperative membership improved information sharing, access to financing opportunities, collective marketing arrangements, and peer support. Cooperative leaders further explained that group-based financing arrangements enhanced accountability and reduced the risk of loan default.

According to one cooperative chairman:

"Most farmers were able to benefit because they belonged to cooperatives. The cooperative system made it easier to access information and financial assistance."

This finding suggests that institutional arrangements played an important role in maximizing the effectiveness of agricultural financing interventions.

Challenges Limiting the Contribution of Financing to Food Security

Despite the generally positive perceptions, participants identified several factors that constrained the effectiveness of agricultural financing.

The most frequently mentioned challenges included:

1. Delayed release of funds.
2. Inadequate loan amounts.
3. Bureaucratic procedures.
4. Limited awareness of financing opportunities.
5. High collateral requirements.
6. Political interference in beneficiary selection.
7. Weak monitoring mechanisms.

Several farmers complained that delays in accessing funds often occurred after critical planting periods, thereby reducing the effectiveness of financial support.

One participant stated:

"Sometimes the funds arrive after the planting season has already started, making it difficult to utilize them effectively."

Consequently, respondents argued that addressing these implementation challenges would significantly improve the food security outcomes of agricultural financing programmes.

ii.) Theme Two: Extent to Which Access to Agricultural Credit Has Enhanced Rice Production

The second objective examined the extent to which access to agricultural credit enhanced rice production under the Cross River State Rice Programme.

Analysis revealed a strong consensus among participants that access to credit constituted one of the most important factors responsible for improvements in rice production during the implementation period.

a.) Expansion of Farm Size and Cultivated Area

The most frequently cited benefit of agricultural credit was the expansion of cultivated farmland. Farmers reported that access to credit enabled them to clear additional land, lease new farmland, and undertake larger production activities. Many participants noted that prior to receiving financial support, they were constrained by inadequate capital and therefore operated at very small scales.
A farmer from Yala explained:
"Credit enabled me to cultivate more hectares than I normally would have been able to manage using personal savings."
Participants generally agreed that farm expansion contributed directly to increased production levels.

b.) Acquisition of Improved Inputs and Technologies

The study found that access to agricultural credit facilitated the acquisition of improved production inputs and technologies. Beneficiaries reported using credit facilities to purchase improved seeds, fertilizers, agrochemicals, irrigation equipment, and mechanized services. Extension officers interviewed noted that farmers who obtained credit generally demonstrated higher levels of technology adoption than those without access to financial support.
According to one programme official:
"Farmers with access to credit were able to purchase quality inputs and adopt better farming practices, which translated into higher productivity."

c.) Increased Productivity and Yield Levels

Respondents consistently linked agricultural credit to improved productivity and higher rice yields. Farmers explained that access to credit enabled them to undertake farming activities more efficiently and at the appropriate time. Many participants indicated that improved access to production inputs contributed to healthier crops, reduced crop losses, and higher harvest volumes.
Documentary evidence reviewed during the study similarly suggested that productivity levels improved among beneficiaries of financing interventions.

d.) Employment Generation and Value Chain Expansion

Beyond production increases, respondents emphasized that expanded rice farming activities generated employment opportunities across the rice value chain. Participants noted that increased production created demand for labour during land preparation, planting, weeding, harvesting, processing, transportation, and marketing. Rice processors and marketers also reported experiencing increased business activities as production expanded.
This finding suggests that the benefits of agricultural credit extended beyond individual farmers to broader rural economic development.

e.) Constraints Affecting Access to Agricultural Credit

Despite its benefits, participants identified several barriers limiting access to agricultural credit.
These included:

1. Stringent collateral requirements.
2. High transaction costs.
3. Complex application procedures.
4. Delays in loan approval.
5. Inadequate loan amounts.

6. Poor financial literacy among some farmers.

Respondents further indicated that many smallholder farmers remained excluded from formal credit schemes due to their inability to satisfy eligibility requirements.
A cooperative member observed:
"The farmers who need credit the most are often the ones who find it most difficult to access it."

f.) Overall Assessment of Agricultural Credit and Rice Production

Across all participant categories, there was overwhelming agreement that agricultural credit positively influenced rice production under the programme. Respondents maintained that credit enhanced farmers' productive capacity, increased cultivated area, facilitated technology adoption, improved yields, and contributed to greater participation in rice farming activities.
Although challenges relating to accessibility and implementation persisted, stakeholders generally viewed agricultural credit as an indispensable instrument for increasing rice production and advancing the objectives of the Cross River State Rice Programme.

Summary of Findings
The findings demonstrate that stakeholders perceive agricultural financing as a critical driver of food security under the Cross River State Rice Programme. Financing interventions were found to enhance food availability through increased rice production, improve household access to food through higher incomes, contribute to food affordability through expanded supply, and strengthen food stability through sustained production activities. Furthermore, access to agricultural credit enhanced rice production by enabling farm expansion, facilitating the acquisition of improved inputs and technologies, increasing productivity, and generating employment opportunities across the rice value chain. Nevertheless, issues relating to inadequate funding, delayed disbursement, bureaucratic bottlenecks, and limited access to credit continue to constrain the full realization of programme objectives.

Discussion
The findings of this study demonstrate that stakeholders generally perceive agricultural financing as a critical factor in enhancing food security under the Cross River State Rice Programme. Evidence obtained from interviews, focus group discussions, and documentary sources revealed a strong consensus that access to financial resources has contributed to increased rice production, improved food availability, enhanced household access to food, and greater stability in food supply. These findings lend considerable support to Agricultural Development Theory, which posits that agricultural transformation and food security are largely dependent on farmers' access to productive resources, particularly finance (Norton *et al.*, 2016). The findings suggest that financing serves as an enabling mechanism through which farmers acquire inputs, expand cultivation, adopt improved technologies, and increase agricultural output.
A major finding of the study is that agricultural financing has contributed to food availability through increased rice production. Participants consistently reported that financial support enabled them to cultivate larger areas of land, purchase improved seeds and fertilizers, engage labour, and undertake farming activities more effectively. Government officials and extension personnel similarly observed that financing interventions encouraged greater participation in rice farming and increased production across major rice producing communities in the state. This finding corroborates the position of Tarasov (2013), who argued that access to finance stimulates agricultural investment and increases farm output through the adoption of productivity enhancing technologies. It also aligns with the observations of

Udah and Nwachukwu (2015), who identified inadequate financing as a major constraint to agricultural productivity among smallholder farmers.
The study further revealed that agricultural financing contributes to food security by improving household access to food through increased income generation. Participants noted that higher rice output translated into improved earnings, which enabled farming households to meet nutritional needs and cater for other socioeconomic obligations. This finding supports the argument of the Federal Ministry of Agriculture and Rural Development (2019) that agricultural financing promotes food security not only through increased production but also through improved household purchasing power and poverty reduction. The findings therefore suggest that financing interventions generate both direct and indirect benefits for food security.

Another important finding relates to food affordability. Respondents generally perceived that increased rice production contributed to greater market supply and relative price stability, particularly during harvest periods. Although participants acknowledged that inflation and rising transportation costs sometimes weakened these gains, there was broad agreement that increased local production improved the accessibility of rice to consumers. This observation reinforces the position of Oyaniran (2020), who maintained that improved access to agricultural finance contributes to agricultural efficiency and increased food availability capable of moderating market prices.

The findings also highlight the importance of agricultural financing in promoting food stability and sustainability. Participants reported that access to financial support enabled farmers to prepare for subsequent farming seasons, maintain production activities, and reduce vulnerability to seasonal shortages. This finding is consistent with the Food and Agriculture Organization (2019), which emphasizes that sustainable food security depends not only on food availability but also on the stability of food supply over time. The ability of financing interventions to support continuous production therefore represents an important contribution to long term food security outcomes.

A notable finding of the study is the role of cooperative societies in facilitating access to agricultural financing. Many respondents indicated that membership in cooperatives improved awareness of financing opportunities and enhanced access to programme benefits. This finding supports the observations of Bassey *et al.* (2016), who argued that development agencies and agricultural support institutions frequently utilize cooperative structures as channels for delivering agricultural interventions. The findings suggest that strengthening cooperative institutions could significantly improve the effectiveness of agricultural financing programmes.

With respect to agricultural credit and rice production, the study found overwhelming agreement among participants that access to credit enhances farmers' productive capacity. Beneficiaries reported that credit facilities enabled them to expand farm size, acquire improved inputs, adopt modern farming techniques, and increase productivity. These findings are consistent with Ayegba and Ikani (2013), who found that farmers with access to formal credit generally achieve higher production efficiency than those without such access. Similarly, Ani *et al.* (2017) reported that microcredit facilities improved rice productivity among farmers in Cross River State through enhanced access to production inputs.

Despite these positive outcomes, the study identified several challenges limiting the effectiveness of agricultural financing and credit interventions. Participants frequently cited delayed disbursement of funds, bureaucratic bottlenecks, inadequate loan amounts, high collateral requirements, and limited awareness of financing opportunities. These constraints suggest that although financing mechanisms exist, institutional and administrative barriers continue to limit their accessibility and effectiveness. This finding supports Nwozor *et al.* (2019), who argued that inadequate institutional support and insufficient public investment remain major obstacles to agricultural development in Nigeria.

Overall, the findings demonstrate that agricultural financing and agricultural credit are indispensable instruments for improving rice production and strengthening food security. The experiences of stakeholders under the Cross River State Rice Programme indicate that increased access to timely and affordable financing enhances agricultural productivity, improves household welfare, strengthens food availability, and contributes to sustainable food security. Consequently, efforts aimed at expanding access to agricultural finance, strengthening cooperative institutions, and addressing existing implementation challenges would significantly enhance the contribution of agriculture to food security in Cross River State and Nigeria as a whole.

Conclusion

This study examined whether agricultural financing enhances food security using evidence from the Cross River State Rice Programme between 2015 and 2025. The findings established that agricultural financing has a significant positive impact on food security, while access to agricultural credit significantly enhances rice production. The study revealed that although the programme has contributed to improving rice production through various support mechanisms, a considerable proportion of rice farmers still experience difficulties accessing loans, credit facilities, grants, and other financial incentives necessary for large-scale production. The findings further showed that financing needs are greatest during the cultivation stage, yet access to affordable credit remains limited due to bureaucratic and institutional constraints.

The study therefore concludes that agricultural financing is a critical determinant of food security. Adequate and timely access to finance enables farmers to acquire productive inputs, expand cultivated areas, adopt improved technologies, and increase output. Consequently, sustainable food security cannot be achieved without strengthening agricultural financing systems capable of supporting farmers throughout the production cycle. The findings also validate the central proposition of Agricultural Development Theory that finance serves as a catalyst for agricultural transformation and improved food security.

Implications of the study

The findings have important policy implications for agricultural development and food security in Nigeria. First, they suggest that increasing agricultural production requires more than the formulation of agricultural programmes; it requires ensuring that farmers have practical and timely access to financial resources. Second, the study highlights the need for stronger institutional frameworks capable of delivering credit facilities efficiently to farmers. Third, the inability of many cooperative societies to provide meaningful financial support raises concerns regarding their effectiveness as channels for agricultural financing. Finally, the findings imply that improving access to affordable agricultural credit could substantially increase rice production, reduce dependence on imported food, strengthen rural livelihoods, and enhance national food security.

Recommendations

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

1. Government should strengthen agricultural financing mechanisms under the Cross River State Rice Programme by increasing access to affordable loans, grants, and credit facilities for rice farmers, particularly during the cultivation stage when financial requirements are highest.

2. Financial institutions such as the Bank of Agriculture (BOA), NIRSAL, microfinance banks, and cooperative societies should simplify credit application procedures and reduce administrative bottlenecks that discourage farmers from accessing agricultural loans.

3. Government and agricultural development agencies should strengthen and recapitalize farmers' cooperative societies to enable them function effectively as channels for agricultural financing, technical support, and farmer empowerment.

4. Regular monitoring and evaluation mechanisms should be established to ensure that agricultural financing interventions reach intended beneficiaries and are utilized for productive agricultural purposes.

5. Agricultural extension services should be expanded to provide farmers with financial literacy, credit management skills, and information on available financing opportunities capable of improving productivity and food security outcomes.

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