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Agricultural Finance Support and Enhanced Production: A Role Play Analysis of Anchor Borrowers' Program in Kebbi State, Nigeria

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ABSTRACT: Agricultural production involves crops cultivation, rearing animals and related activities to produce foods and other products for the various utilizations of man and animals that drive food security in an area. Agricultural production is contingent on a number of factors like climate variability, economic, socio-cultural factors, land type and its condition, among others This study evaluates the Central Bank of Nigeria (CBN)-supported Anchor Borrowers' Program (ABP) in facilitating increased food production and the socio-economy of small-holder rice farmers, by a factor of up to 75% during the 2019/2020 farming season according to a study involving about 340 respondents from Kebbi State. Using primary data and 320 respondents, study employed both descriptive and inferential statistical analyses to assess the effectiveness of the ABP support initiative on rice production and income of beneficiary farmers in the study area. Findings revealed that the ABP substantially improved rice production and farmers' income levels, as well as promoted sustainable agricultural practices in this area. The study recommends expanding ABP's coverage, diversifying crops, increased funding, improving policy frameworks, and strengthening stakeholder engagement.

KEYWORDS: Agricultural Financing, Agricultural Production, Food Insecurity, Income, Socio-economy.

INTRODUCTION

Background and Statement of the Study Problem

Agricultural production entails crops, the process of cultivation rearing animals and, or other animals, and related activities to produce foods and other products for the various utilizations of man and animals that drive food security in an area. Agricultural production is contingent on climate variability, cultural practices and land condition, among others Agricultural financing support is an important issue in enhanced and sustainable agricultural productivity, food security and meaningful development that should be taken into by governments at all level as is the case with the 2015 Federal Government of Nigeria (FGN)'s ABP's agriculture finance support through the Central Bank of Nigeria (CBN) in Kebbi and other States in the 2019/2020 cropping year Dahiru, 2023; (Bashir, 2020).

The key factor in food insecurity is inadequate production due to poor/inadequate financial and inputs supports, lack of extension and value addition services. According to the Food and Agriculture Organization (FAO), 12.5% of the global population representing about 870 million people are estimated to be undernourished in the period 2010–2012, with their vast majority (852 million) in developing countries (Zakari; Ying, and Song, 2014). The COVID-19 pandemic has exerted significant pressure on global food supply chains, affecting both supply and demand sides, with Africa as the worst hit. Also, insecurity has been a major impediment to food security in Africa, with Farmers constantly chased out of their communities in many sub-Saharan nations (Pan, et al., 2020).

This study assess the impact of ABP on rice production and smallholder farmers' income in Kebbi state where statistic on rice production have shown an increase from 90,000 metric tons to 210, 000 metric tons, with a capacity of reaching up to 320,000 metric tons in the next one year (Udemezue, 2018; Imolehin & Wada, 2000).

Despite the progress made through the APB, food insecurity remains a pressing issue in Nigeria however. While studies have examined the impact of the ABP on rice production and

farmers' income, most have focused on the early years of the program and limited geographic areas, and hence the need for more comprehensive research to assess the program's long-term impact and identify strategies for scaling its successes.

Aim and Objectives

This paper examines the links between ABP and income levels of affected farmers, with a view to demonstrate the nexus between the two; and encourage the practice of agricultural credit support in the country, essential in achieving the UN Sustainable Development Goal 2.

The study posits that agricultural financing is indispensable in enhanced and sustained food production and meaningful development, especially among small holder farmers, who are the bulk producers of foods in Nigeria. In spite of the fact that agriculture is an age long activity practice in Nigeria, the country still quest for food security.

LITERARURE REVIEW

Agricultural Sustainability: This entails continuous and enhanced availability of quality and affordable agricultural commodities for all. Producing sufficient quality food is one of the most important challenges for humanity in the next century. The evolution of technology has led to the intensification of agricultural production and several impacts that militate against sustainable productivity and enhanced income for the farmers (Bashir, 2020).

Agricultural Sustainability Assessment

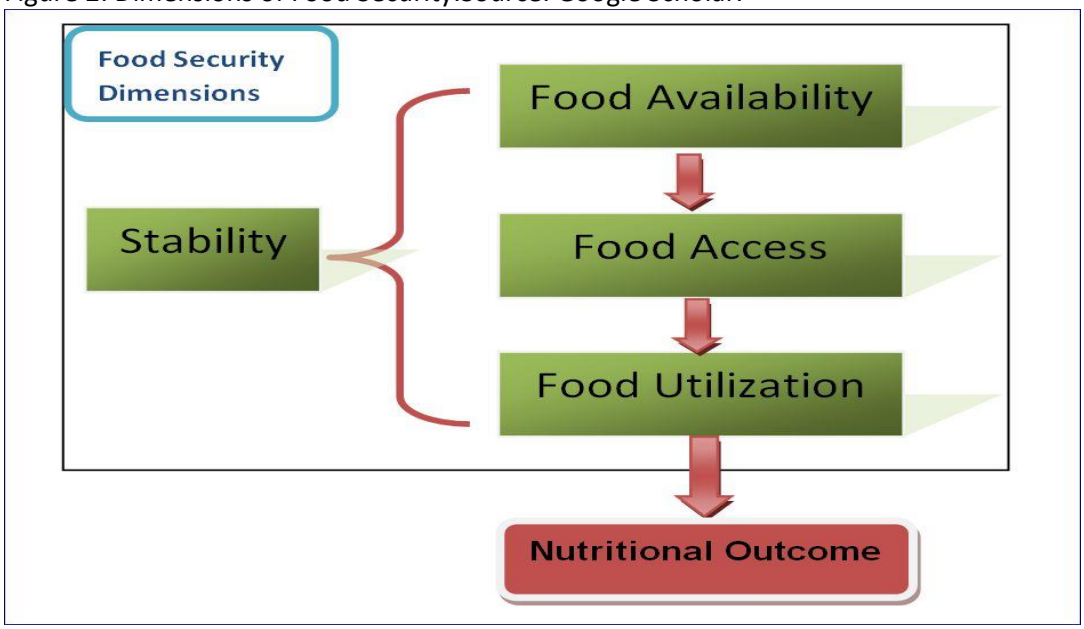
This is a complex but essential means of ascertaining weather agricultural sustainability is achieved/ achievable. Figure 1 presents the processes in agricultural sustainability assessment. Although there are as many cultivation practices as there are cultivable crops and lands, agronomic practices, technology, as well as the quantities and type of materials used (may) vary from place to place, depending on the type of crop, the implementation practice, and the prevailing climatic conditions. All of these parameters affect cultivation, productivity and income/profitability of the farmers (Lampridi, Sørensen, and Bochtis 2019).

Figure 1: Variables involved in agricultural sustainability assessment, after Lampridi, Sørensen, and Bochtis (2019). The interest in agricultural sustainability and food systems can be traced to environmental concerns that began to appear in the 1950s (Cato 1979; Hesiod 1988; Conway 1997; Li Wenhua 2001). Today, concerns about food sustainability center on the need to develop good agricultural technologies and practices that do not have adverse effects on the environment and that lead to both improvements in productivity and positive effects on the environment (Pretty, 2007).

Evolution of Food Security

The most recent redefinition of food security is from the 1996 World Food Summit (WFS) (Clay, 2002), with the first definition by the World Food Conference of 1974, which defined food security in terms of food supply-assuring the availability and price stability of basic foodstuffs at the international and national levels, which entails the "availability at all times of adequate food supplies to sustain a steady expansion of food consumption and to offset fluctuations in production and prices". More recently, the ethical and human rights dimension of food security has come into focus. It pointed the way towards the possibility of a rights-based approach to food security (FAO, 2006; Ojo, & Adebayo, 2012). However, the World Health Organization (WHO) states that there are three pillars that determine food security, thus: food availability, food access, and food use and misuse. In 2009, the World Summit on Food Security stated that the "four pillars of food security are availability, access, utilization, and stability".

Figure 2: Dimensions of Food Security.Source: Google Scholar.

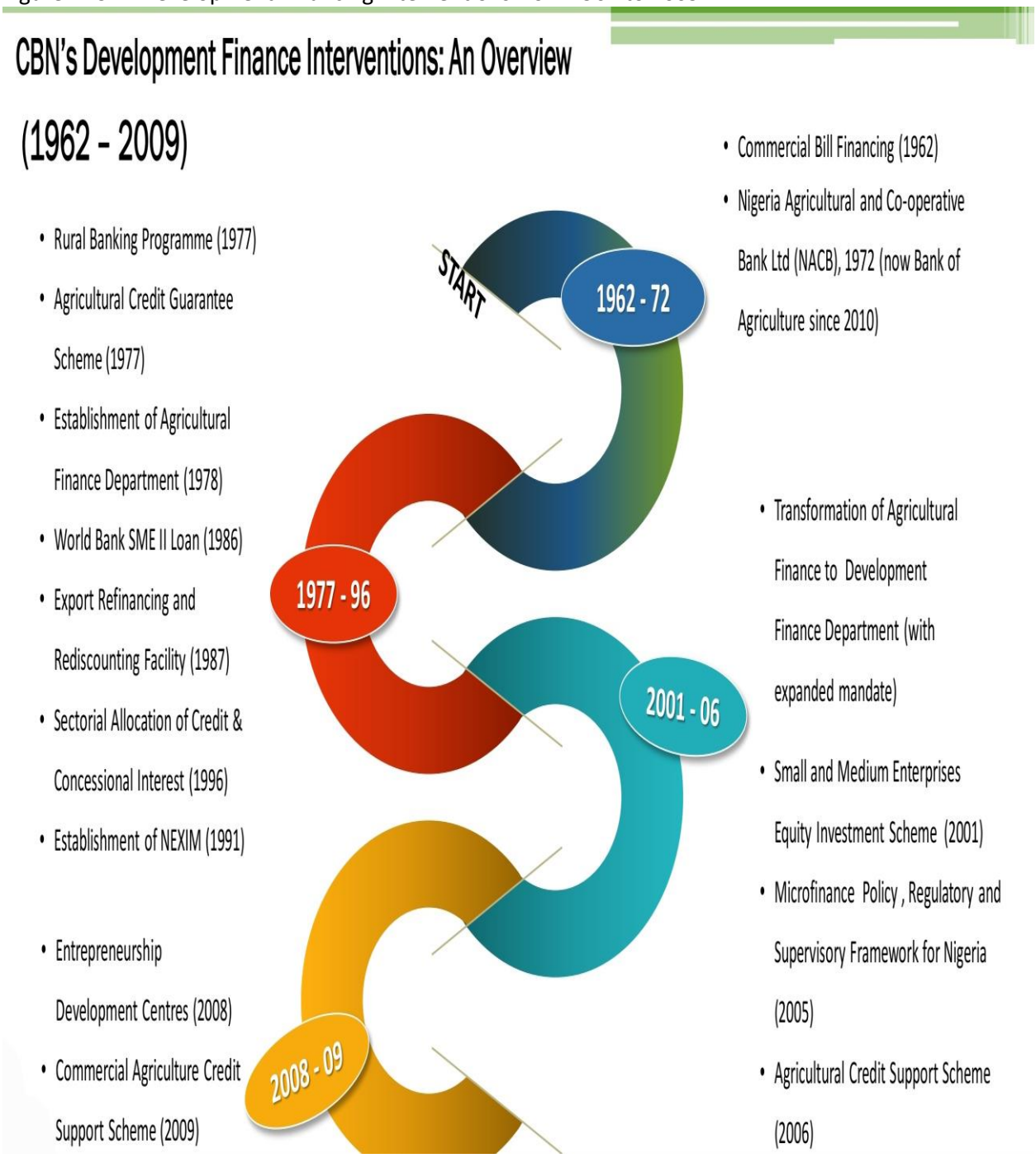


Reality of Food Security and CBN Interventions in Nigeria

Agriculture is the largest sector of the Nigerian economy, generating employment for about 70% of the population and contributing about 40% to her GDP. The country has enormous agricultural potential, given her population of about 210 million people, 55% of which are active. The country has about 90 million hectares of arable land, only 50% of which is being utilized. CBN development financing started in 1960s with agricultural export support, followed by the formation of the Nigerian Agricultural Cooperative and Rural Development Bank (NACRB), Agricultural Credit Guarantee Scheme Fund (ACGSF) in 1977, and Agricultural Finance Department in 1979, which later evolved into the Development Finance Department (DFD) in 2002 (CBN, 2014 – 2018).

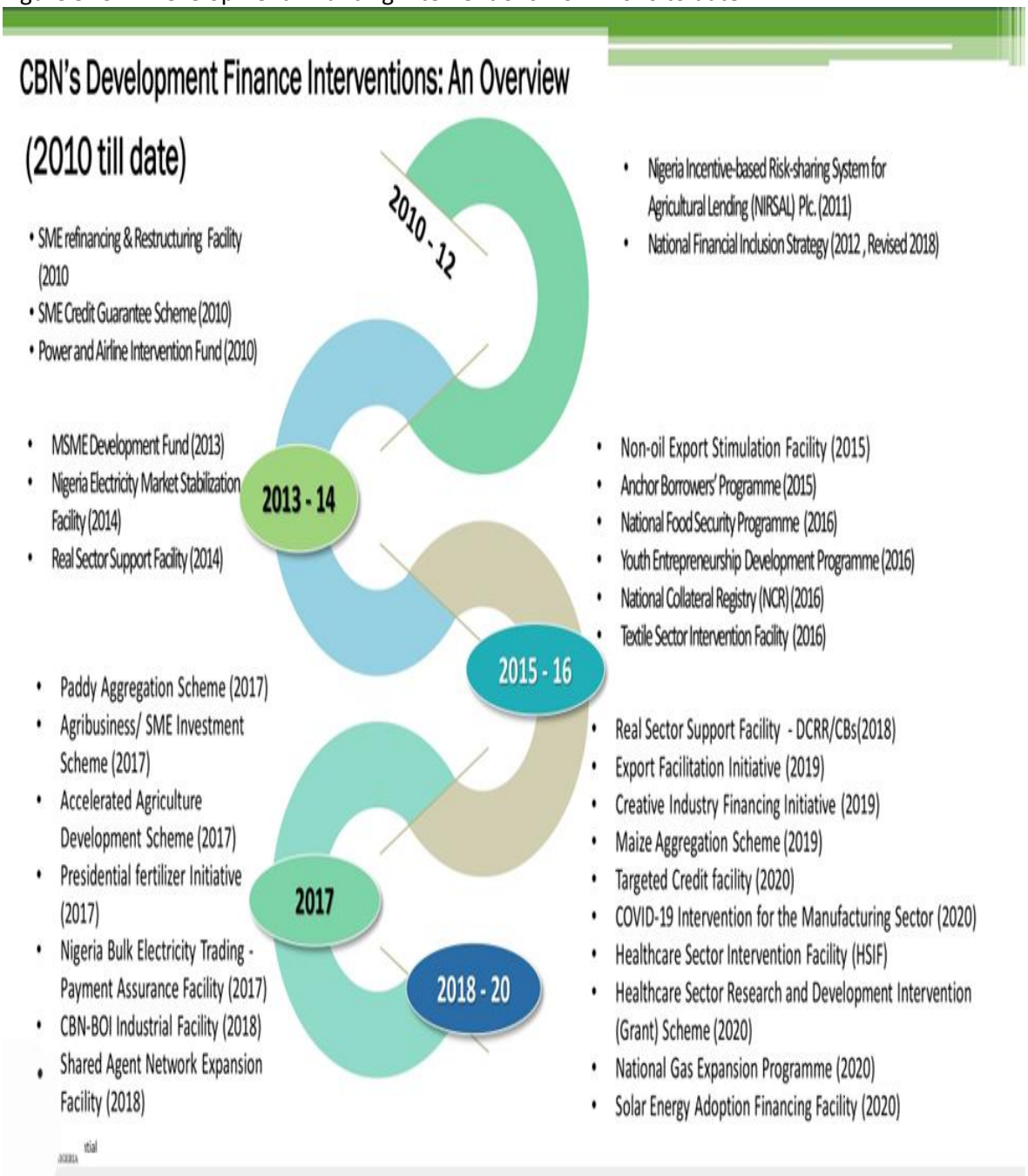
Other CBN development financing initiatives are indicated on figures 4 and 5:

Figure 4: CBN Development Financing Interventions from 1962 to 2009.



Sources: Adopted from DFD-CBN, (2020).

Figure 5: CBN Development Financing Interventions from: 2010 to date.

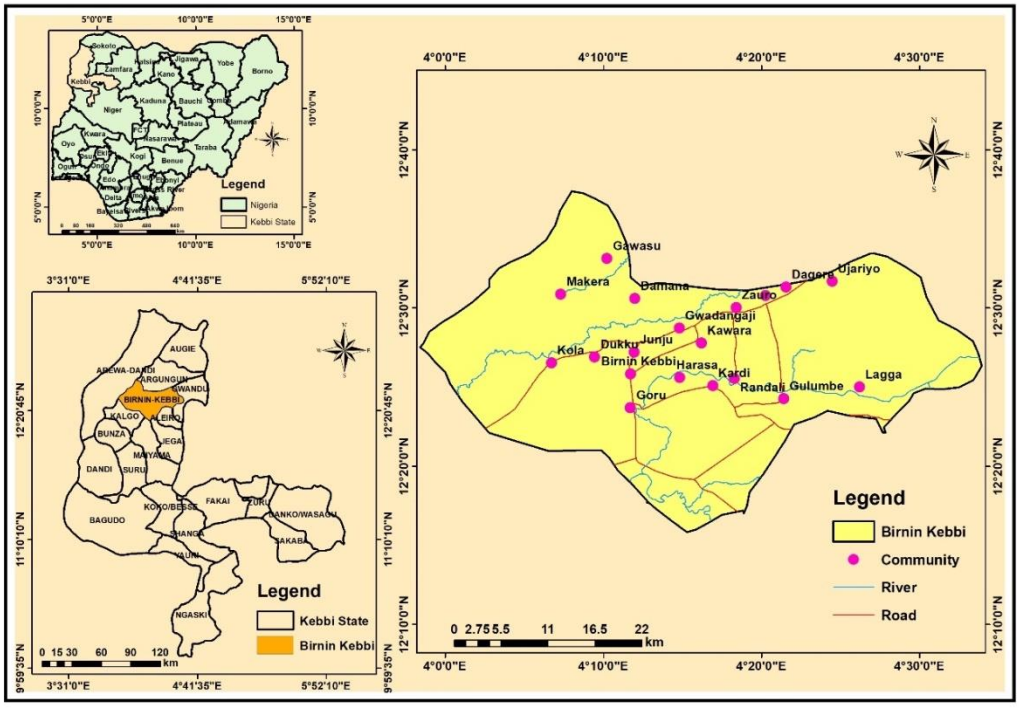


Sources: Adopted from DFD-CBN, (2020)Materials and method

MATERIALS AND METHOD OF STUDY

The study area is Kebbi, Kebbi State, located on the NW part of Nigeria between latitudes 10° and 13° N and longitudes 3° 30' and 6° E., with a total landmass of about 37,699 square kilometers, 36.46% of which is made up of farmland. The state shares borders with Niger Republic to the North and Benin Republic to the west. It is internally bordered to the North-East by Sokoto State, to the East by Zamfara State and to the south by Niger State.

Figure 6: Map of Study Area



Source: NSUK GIS LAB

The climate of this area is tropical in nature, characterized with tropical weather conditions. The state has rainy and dry seasons, with the former between mid-May and mid-September, while the latter lasts for seven months period yearly, with of annual temperature variation between 650F and 1040F. The state has a population of 3,238,628 (NPC, 2006), with Agriculture as the most important livelihood activity.

Purposive sampling method was used in data collection given the nature of the study universe, which is constituted by the APB beneficiary farmers, with a sample size of 300, and the socio-economic conditions, size of farmlands, yield per hectare, and the gender as the parameters, constituting a sample which represents the study area. Both primary and secondary data were used in the study.

RESULTS AND DISCUSSIONS

Progress under the ABP, before and after intervention

Table 1: Rice Yield in tons before and after ABP intervention

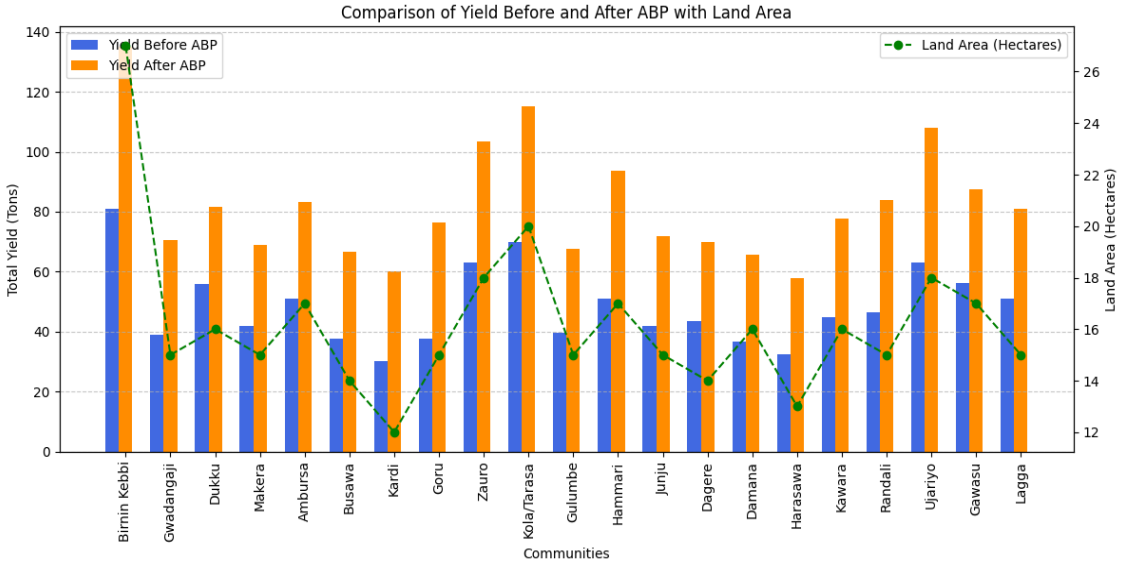
Community name	Land area in hectares	Total yield in tons before ABP	Total yield in tons after ABP
Birnin Kebbi	27	77.50	135.00
Gwadangaji	15	43.50	70.50
Dukku	16	45.60	81.60
Makera	15	42.00	69.00
Ambursa	17	49.30	83.30
Busawa	14	40.60	66.50
Kardi	12	34.20	60.00
Goru	15	43.50	76.50
Zauro	18	50.40	103.50
Kola/Tarasa	20	56.00	115.00

Gulumbe	15	42.75	67.50
Hammari	17	48.45	93.50
Junju	15	42.00	72.00
Dagere	14	43.40	70.00
Damana	16	44.00	65.60
Harasawa	13	37.70	57.85
Kawara	16	44.80	77.60
Randali	15	43.50	84.00
Ujariyo	18	52.20	108.00
Gawasu	17	49.30	87.55
Lagga	15	42.75	81.00
Total	340 Hectare	973.45 Tons	1725.50 Tons

Sources: Researcher's computation from the survey questionnaire

The data in the table highlights a significant increase in rice production across the communities. Before the ABP, the total rice yield across 340 hectares was 973.45 tons, but after the program, the figure rose to 1,725.50 tons, representing an increase of over 75 %.). Also the increase in total yield implies broader economic and social impacts for the study area.

Figure 7: Visualization of Rice yield before and after ABP intervention



The comparison of rice yield before and after the implementation of the ABP reveals significant improvements in agricultural productivity across the communities, suggesting that the program has successfully enhanced farming outputs in the study area.

Impact of ABP on Income Generation of the Farmers

Part of the objectives of the ABP is to grow the economy and enhance the socio-economic livelihood of smallholder farmers. Data obtained from the field indicated that a ton of rice goes for ₦1,200.000.00. This price is used to calculate the value of farmers' output in ton as indicated on table 7 below:

Table 2: Income generation before and after ABP intervention

Land Area (Hectare)	Total Yield Before ABP (Tons)	Total Yield After ABP (Tons)	Income Before ABP (₦)	Income After ABP (₦)	Income Increase (₦)
27	77.50	135.00	93,000,000.00	162,000,000.00	69,000,000.00

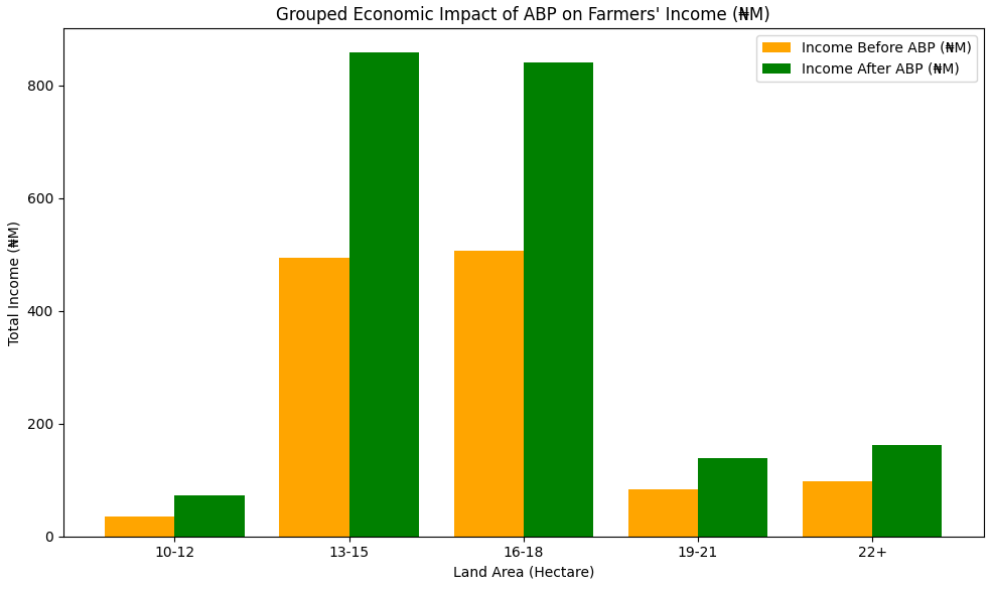
15	43.50	70.50	52,200,000.00	84,600,000.00	32,400,000.00
16	45.60	81.60	54,720,000.00	97,200,000.00	42,480,000.00
15	42.00	69.00	50,400,000.00	82,800,000.00	32,400,000.00
17	49.30	83.30	59,160,000.00	99,960,000.00	40,800,000.00
14	40.60	66.50	48,720,000.00	79,800,000.00	31,080,000.00
12	34.20	60.00	41,040,000.00	72,000,000.00	30,960,000.00
15	43.50	76.50	52,200,000.00	91,800,000.00	39,600,000.00
18	50.40	103.50	60,480,000.00	124,200,000.00	63,720,000.00
20	56.00	115.00	67,200,000.00	138,000,000.00	70,800,000.00
15	42.75	67.50	51,300,000.00	81,000,000.00	29,700,000.00
17	48.45	93.50	58,140,000.00	112,200,000.00	54,060,000.00
15	42.00	72.00	50,400,000.00	86,400,000.00	36,000,000.00
14	43.40	70.00	52,080,000.00	84,000,000.00	31,920,000.00
16	44.00	65.60	52,800,000.00	78,720,000.00	25,920,000.00
13	37.70	57.85	45,240,000.00	69,420,000.00	24,180,000.00
16	44.80	77.60	53,760,000.00	93,120,000.00	39,360,000.00
15	43.50	84.00	52,200,000.00	100,800,000.00	48,600,000.00
18	52.20	108.00	62,640,000.00	129,600,000.00	66,960,000.00
17	49.30	87.55	59,160,000.00	105,060,000.00	45,900,000.00
15	42.75	81.00	51,300,000.00	97,200,000.00	45,900,000.00
	973.45 Tons	1725.50 Tons	1,168,140,000.00	2,069,880,000.00	901,740,000.00

Sources: Researcher's computation from the survey questionnaire, (2023).

The data above shows a remarkable increase in income generation after the implementation of the ABP. Before the ABP, the total income from rice production across the communities stood at ₦1,168,140,000.00, but this rose significantly to ₦2,069,880,000.00 after the program with an increase of ₦901,740,000.00. This more than 77% jump in income, suggests that ABP interventions has improved the income/financial benefits of rural farmers.

Also, the table indicates that the income increases were widespread across both small and large landholding farmers, suggesting that ABP was both inclusive and effective across different farm scales, with broader positive socio-economic implications.

Figure 8: Histogram illustration of income generation before and after the ABP.



The results indicate that the adoption of ABP led to a universal increase in farmers' incomes. The impact on smallholder farmers is particularly significant, as demonstrated by income increases averaging between 49% and 105%. Such growth represents a major boost to household earnings, helping to reduce poverty levels and improve the overall standard of living for farming families. ABP intervention has a significant positive impact on smallholder farmers, with an average income increase of ₦2,652,176.47 per farmer as highlighted by the bar graph.

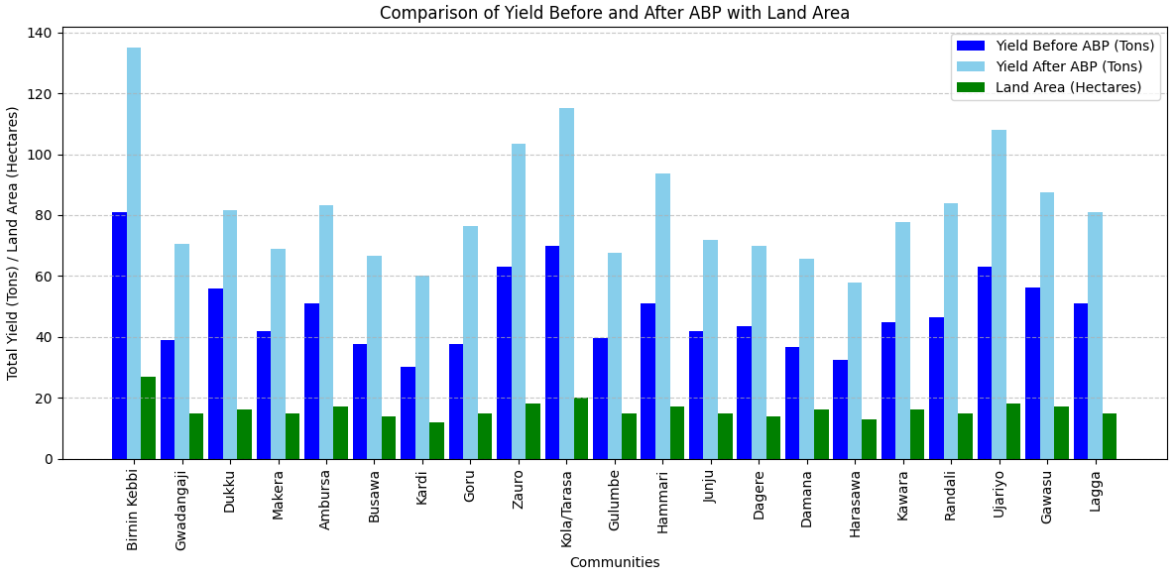
Table 3: Crop yield and income generated before and after the program

Land Area (Hectare)	Total Yield Before ABP (Tons)	Total Yield After ABP (Tons)	Income Before ABP (₦)	Income After ABP (₦)	Income Increase (₦)
27	77.50	135.00	93,000,000.00	162,000,000.00	69,000,000.00
15	43.50	70.50	52,200,000.00	84,600,000.00	32,400,000.00
16	45.60	81.60	54,720,000.00	97,200,000.00	42,480,000.00
15	42.00	69.00	50,400,000.00	82,800,000.00	32,400,000.00
17	49.30	83.30	59,160,000.00	99,960,000.00	40,800,000.00
14	40.60	66.50	48,720,000.00	79,800,000.00	31,080,000.00
12	34.20	60.00	41,040,000.00	72,000,000.00	30,960,000.00
15	43.50	76.50	52,200,000.00	91,800,000.00	39,600,000.00
18	50.40	103.50	60,480,000.00	124,200,000.00	63,720,000.00
20	56.00	115.00	67,200,000.00	138,000,000.00	70,800,000.00
15	42.75	67.50	51,300,000.00	81,000,000.00	29,700,000.00
17	48.45	93.50	58,140,000.00	112,200,000.00	54,060,000.00
15	42.00	72.00	50,400,000.00	86,400,000.00	36,000,000.00
14	43.40	70.00	52,080,000.00	84,000,000.00	31,920,000.00
16	44.00	65.60	52,800,000.00	78,720,000.00	25,920,000.00
13	37.70	57.85	45,240,000.00	69,420,000.00	24,180,000.00
16	44.80	77.60	53,760,000.00	93,120,000.00	39,360,000.00
15	43.50	84.00	52,200,000.00	100,800,000.00	48,600,000.00
18	52.20	108.00	62,640,000.00	129,600,000.00	66,960,000.00
17	49.30	87.55	59,160,000.00	105,060,000.00	45,900,000.00
15	42.75	81.00	51,300,000.00	97,200,000.00	45,900,000.00
	973.45 Tons	1725.50 Tons	1,168,140,000.00	2,069,880,000.00	901,740,000.00

Sources: Researcher's computation from the survey questionnaire, (2023).

The table reveals a significant rise in farmers' income, reflecting direct economic benefits to the farmers. Across the communities, total income increased from ₦1,168,140,000.00 before ABP to ₦2,069,880,000.00 after ABP. This rise in total rice yield from 973.45 tons to 1,725.50 tons, shows that the ABP successfully translated higher output into greater financial returns.

Figure 9: Crop yields before and after ABP intervention



CONCLUSION

The ABP intervention is highly successful, reinforcing the idea that agriculture financing is key strategy for enhanced and sustainable food production/security, improved farmers' income and meaningful development in an area. The findings of this study indicate that ABP is effective in boosting agricultural productivity by promoting sustainable agricultural practices, and contributed significantly to ensuring food security by transforming traditional smallholder farmers into large-scale and commercially oriented producers, ensuring both steady and sustainable income flow for them. In spite of its potentials, ABP intervention has important challenges inimical like high initial costs at take-off, social barriers like resistance to change and gender inequality, technical hitches and institutional weaknesses, among others.

To fully realize its potentials, a holistic approach is essential to improve access to resources, promote gender equality, and invest in critical infrastructure. By addressing these constraints, the adoption and performance of ABP will be significantly enhanced, paving the way for sustainable agricultural development and improved livelihoods for farmers in Nigeria.

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