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An Assessment of Commercial Agriculture Credit Scheme on Rice Farming in Kano State, Nigeria

Yerima Emmanuel Gyong[1*], Peter P Njiforti[2], Mike C. Duru[3] & Salamatu I. Isah[4]

[1]Department of Economics and Development Studies, Federal University Dutsin Ma, Nigeria
[2,3,4]Department of Economics, Ahmadu Bello University Zaria, Nigeria

*Corresponding author yegyong@fudutsinma.edu.ng

Abstract
Commercial agriculture credit scheme (CACS) is one of the Federal Government programs to encourage commercial agriculture. In Nigeria rice farming is characterized by low productivity and low yield leading to rice shortage. The shortage in production creates the demand and supply gap. This study investigated how the CACS has promoted commercial rice farming in Kano State. Primary data was sourced from 377 beneficiary farmers of CACS through survey method and key informant interview (KII) was conducted. These rice farmers were sampled from three agricultural zones in Kano; Zone I (Rano), Zone II (Danbatta) and Zone III (Gaya). The study employed the household commercialization index (HCI). The study employed the household commercialization index (HCI). The study found that about 42.6% of the farmers got less than one million naira and about 57.4% one to two million naira, 19.5% got three to 4 million naira and 3% got five million naira. The HCI revealed before CACS 36.9% did not go commercial, 48.2% partially went commercial and 14.1% were fully commercial. After CACS 55.6% did not go commercial, 25% partially went commercial and 19.6% fully went commercial. Based on other indices of commercialization, 82% cultivated rice on less than one hectare of land, after CACS 63.9% cultivated rice on less than one hectare of land. The study recommended the need for policy makers to be genuine to enhance self-sufficiency and commercialization to ensure diversification and export of rice product. Government should be able to allocate more production resources to farmers, because this can enhance the realization of self-sufficiency in rice production..

1.0 Introduction
Rice is an important crop that has in recent years become the major staple food. Because of its importance, rice farming is a common practice, which is a predominant occupation in most states including Kano State. But the farming of rice has been characterized by traditional practice of small holdings, broadcasting planting system, rain fed, low level of mechanization etc, and the end result is low productivity. While the international standard of average yield of rice per hectare is 4 – 7 tonnes/hectare (i.e average yield of China, Brazil, Indonesia, India is 6.75ton/ha, 5.2ton/ha, 5.13ton/ha and 4 ton/ha respectively; while the average yield of Egypt is 9.7ton/ha and Mauritania is 5.2ton/ha). In Nigeria, the yield of rice on the average is 1.51ton/ha. However, the low yield in Nigeria translates to rice shortage. Therefore the shortage in production creates the demand and supply gap. It has been observed that the local production of milled rice in Nigeria is estimated to be 5.8 million metric tonnes on the average annually while the demand needs is estimated to be 7 million tonnes annually. This gives a supply gap of estimated to be 1.2 million metric tons. To make up for the shortfall, in 2014, Nigeria incurred a bill of N1 billion daily for rice importation. Also in the year 2012 and 2015 (between January and May respectively) the Government of Nigerian had an expenditure on rice importation of $2.41 billion (Emefiele, 2015). The national rice demand for rice in 2016 was estimated to be 6.3 million metric tons, the supply in the domestic economy was estimated to be 2.3 million tons (FMARD, 2016). And so the import was expected to fill the deficit of 4 million metric tons. This further show that the consumption needs and demand is high and supply low. It is expected that the high import of the rice is to fill the shortage in supply instead of producing the rice domestically. This

means that import of rice is expected to fill the shortage in the Nigerian economy in o other to meet up with the consumption needs of Nigerians.

In Nigeria, Kano is one of the States that is known for rice production. Most of the production areas are in the fadama and the Kano River Basin areas. The average rice farm size is about 0.5 hectare per household, and the yield per hectare is hardly 1.5 metric tonnes. With the introduction of the CACS credit scheme, many rice farmers in Kano are noticed to have benefited from the scheme through the various state cooperatives. The expectation is that rice production in the state is supposed to have up scaled in land area, yield and income. So, this study evaluates the impact of CACS on rice production performance in Kano State, Nigeria.

Therefore, this paper made an assessment of commercial agriculture credit scheme (CACS) on rice farming in Kano State.

2.1 Conceptual Literature

2.2 Credit: Credit is a situation arranged to get cash, goods immediately in payment of the items in the future. Secondly it is an expectation of money that can be used to purchase goods and services. It is an advance of goods and services in exchange for a promise to pay at a later date. It is the use of money for future income. The consumption of credit is for personal needs, by individuals and families. The use of credit includes the financial charge in all related costs i.e. interest, processing fee. It has a maturity, installment amount, repayment period and frequency of payment.

2.2.2 Commercial Credit: This refers to preapproved money that is made available by a bank or an institution saddled with the role of lending to company, group and coopeartives. And so these entities can obtain money in form of commercial credit based on their discretion so as to meet up with its financial obligations.

2.2.3 Commercial Agriculture Credit

Commercial agriculture credit refers commercial credit that is arranged and disbursed to individual households, groups, cooperatives or companies in form of cash for large agricultural production activities with the sole aim of paying at a later date. Commercial agriculture credit is intended to improve small scale production for large scale production in agriculture which is intended for the market. Therefore the use of commercial agriculture credit is intended to shift agriculture production from a small scale level to a large scale level.

The concept of commercial agriculture credit can be viewed from another perspective. Commercial agriculture credit is a mechanism that is used to finance improved agriculture production from the subsistence level of production to the commercial level production so as to increase food availability in an economy. This agriculture production could be in the form of crop, diary, fishing, livestock, fruit and vegetable etc.

2.2.4 Commercialization

Commercialization is a concept showing the process of production changing from subsistence level been transformed or shifted to market oriented level. The target of commercialization is to move from subsistence level of production to a production that is aimed at supply to the market. It means that the goal of commercialization is for the market rather than for consumption purpose only. Commercialization can be viewed from different angles; first the output, secondly the input side. The output side has to do with increased market surplus**,** while the input side, has to do with increase in the use of inputs.

2.3 Theoretical Literature

2.3.1 Commercial Loan Theory of Liquidity

Adam Smith (1776) described bank liquidity by explaining that short term loans made to finance goods that are salable, in the process which moves from the producer to the consumer are considered to be the loans that are liquid that bank(s) can make. These loans are termed to be self-liquidating. The reason is that these goods that are being financed will be sold within the shortest period of time. And so the borrower ability to

pay back to the bank is based on the loan which a transaction is financed and the transaction made can provide the needed funds to the borrower. These loans according to Adam Smith are liquid. This is because of the collateral attached to these loans and the purpose in which they are used for. Secondly the loans are the most liquid because of the value chain where it moves very fast (or quickly) from the producer to the distributors, to the retailer and it reaches the consumer who buys and pay for their purchases.

The commercial loan theory (or the theory of real bills), states that only self-liquidating productive loans in the short term should be forwarded to business organizations by a commercial bank. And so loans that are self-liquidating pass through various channels of production, distribution, transportation and storage. Therefore, the various phases of production can be financed by these loans.

This theory further states that the central bank should assist by lending to the banks on the basis of the security of the short term loans any time there is self-liquidating short term productive loans by commercial banks. By this, the existence of a proper channel can determine the degree of liquidity in each bank which can make the appropriate supply of money in the economy.

The theory has three advantages which shows that the loans are short term self-liquidating. The loans liquidate themselves automatically, since the loans are for productive ambitions, their maturity is in the short run and so there is absence of risk in terms of running into debt. Lastly these loans earn income for the banks because their productivity is high.

2.3.2 Utility Maximization Models

Consumer theory and utility are models of consumer decision making behavior. These models tell us how perfectly, economically rational consumer ought to reason in order to guarantee maximum total benefit for themselves.

2.4.3 Utility Maximization Theory

The utility maximization developed by Jeremy Bentham (1748-1832) and John Stuart Mill and incorporated into Economics by Alfred Marshall (1890). Utility maximization theory is an important concept in classical economics. Utility is a concept that measures the satisfaction derived by humans. Utility is affected by the consumption of different goods, services and the same time if one possesses wealth in a particular period of time. And so a farmers' household can cultivate their land so as to meet his needs and to increase wealth by engaging in different activities, i.e participating on commercialization of his product and participation in the market. Therefore utility can be measured based on the production leading to achieving wealth and desired outcome or result. However it is expected that these farmers' household can make decisions towards their crop cultivation with the intention to take it to the market for sale so as to yield or achieve maximum satisfaction from the sale of this goods.

Following this, the decision of participating in the rice production and market or not is a binary choice. This is because of the nature of the dependent variables (they are dichotomous) that is to participate or not to participate in rice production and rice market. So therefore the decision to participate or not can considered within the general framework of utility or the framework of profit maximization (Norris and Batie, 1987; Pryamishnikov and Katrina, 2003). Within this framework, economic agents are small scale farmers that are given commercial credit to go into large scale rice farming and whose decisions are going to be measured by utility that is perceived. Therefore the actions of the economic agents are going to be observed through the choices they make. (This is because utility may not be directly observed).

The transmission mechanism is determined by the role of credit in production. In this study credit serves as a link for purchase of farm inputs and production output. Credit has the ability to boost investors' confidence and can be an increasing function of rice production output of farmers in the economy.

So therefore the use of credit allows farmers to participate in commercial farming by giving them the opportunity to produce rice in commercial quantity. Where the role of commercial credit can determine the intensive and extensive form of agriculture farming. And so the transmission channel of access to credit can have effect on farmers directly and indirectly. The direct effect such as improved income, status,

agricultural revenue, boost production, increase farm productivity and income, enable food sufficiency effect, reduction in rural poverty etc. while the indirect effect is on household in terms attitude (behavior), marital status, income i.e farm income, consumption expenditure, improved consumption, and improved household well-being.

2.5 Empirical Literature Review

In the course of reviewing literature, it has been observed that most literature were on agriculture credit and to the best of my knowledge none on commercial agriculture credit and commercial farming. Although there were studies on commercial agriculture and commercial farming where farmers have access to credit and finance to enable them participate in the commercial farming process. And so literature on access to agriculture credit was easier because it is access to this credit that determines if such farming is going to be at the commercial level, semi-commercial level or subsistence level. Therefore our empirical literature review revealed that access to credit depends on whether a farmer is into subsistence or commercial agriculture.

The growing body of literature indicating possible linkage between commercial agriculture credit, agricultural credit and rice farming in Nigerian economy notwithstanding reveal that there is still paucity of empirical evidence as to the magnitude of the contribution of commercial agriculture credit to commercial rice farming. Previous research and literature over the years have been growing rapidly. But the studies of Rahaman Shajedur *et.al.* (2021), Cahyad, Iskandarini, Rahmanta (2021), Okwera, Okello, and Mugonola (2021), Okoh et.al. (2021), Adewuyi and Amurtiya (2021), Abiola, Omhonlehin and Sani (2021), Olubunmi and Nma (2021), Chikezie et.al. (2020), Njogu, Oluweny and Njeru (2018); Ajah, Igiri and Ekpenyong (2017); Agba (2014), Abarshi (2014), Ataboh et al., (2014); Agbo et al., (2014); empirically limited their scope only to agriculture credit on farm productivity, the relationship between credit access from commercial banks and production capacity, also studies on agricultural credit accessibility and rice production, use of credit in rice farming productivity and income; agricultural production, technical efficiency and technical inefficiency.

Omoregie, Ikpesu and Okpe (2018); Olorunsola, Adeyemi, Valli, Kufre and Ochocha (2017); Orok and Ayim (2017) carried out their studies on agriculture credit and with its impact on agriculture sector performance, share and GDP of different economies, agriculture credit supply and rice output, bank credit on output and agriculture sector development.

Overall, it was observed that most of the literature limited their scope only to technical efficiency, productivity and determinants of access to credit, increase in income as a result of access to credit. In my assessment, only few were concerned with commercial agriculture credit on production and productivity, determinants of commercialization such as Iheke, Onu and Egem (2021), Abdullah et.al. (2019), Osuafor, Azubugwu and Nwankwo (2018), Agbo et al., (2013), Obilor (2013); and Ayegha and Ikami (2013).

The foregoing literature suggests that the relationship between credit supply and agricultural production in Nigeria is inconclusive leading to divergent views. However, there is still paucity in the various literature reviewed especially in the area of commercial agriculture credit and its effect in Kano State. This is because in my assessment there were no studies in this period carried out on commercial agriculture credit in Kano State especially in the period 2009 – 2021 . Also it has been observed that scholars where concentrating mainly on the direct effect of credit, how it affects productivity, and determinants of credit. Following this, it has induced this study to examine the effect of credit supply, through commercial agriculture credit scheme (CACS) on rice farming output. By assessing the extent of commercialization of rice farmers. This is because commercialization is a part of the greater, improved and increased change that is needed. This is a footprint to measure if farmers' household have shifted from subsistence form of production towards a more specialized and advanced production towards the market.

3.1 Theoretical Framework

The study adopted and adapted three theories, which are the rational choice theory, commercial loan theory of liquidity and utility maximization theory. The theoretical framework used involved a synthesis of the

rational choice theory of credit, commercial loan theory of liquidity and utility maximization theory. The theoretical framework shows the relationship between credit and production (rice production) which is focused largely on the positive effects of access to commercial agriculture credit. The accumulation of a credit has the potentials of self liquidation in the short run as long as it is used for production transmitting to various stages of production.

The individual rice farmer is assumed to make a rational choice given his choice considering his behavior in making his decision into rice farming. The choice of the rice farmer is informed by his decision to access credit. The choice of the rice farmer is assumed to be his best choice and it is rational. His decision is informed by the service characteristics and the attributes of the credit scheme. Therefore his decision is a function of the available services that will be supplied by the scheme. The decision of the rice farmer is informed by his choice that rice is a salable product. Accessing commercial credit can finance rice product because it can increase quick turn over. Rice product is liquid in the short run because of its high consumption demand. And so if credit resources are adequately utilized it can increase production and sold within the shortest possible time. The quick turn over can enable the rice farmer pay back commercial credit. It is also expected that rice production can move quickly from the producers through the retail outlets, and purchased by the ultimate cash paying consumer. The reason is that there is high demand for rice in the market. Farmers' access to commercial credit for rice farming will improve successive phases of production, storage, transportation and distribution. Utilizing commercial credit can improve rice farming. Utilization of commercial credit by the rice farmer to cultivate on land can meet the needs of the rice farmer, by engaging in different activities to create wealth and increase wealth through engaging himself in different activities (i.e. off farm and on farm activities). And can as well sell his product in the market. Efficient utilization of commercial credit can transform into increased wealth and desired outcome. This will enable the rice farmer to maximize output and minimize cost. Thereby leading to maximum satisfaction. Since commercial agriculture credit scheme came with various innovative strategies to transform rice farming so as to realize the objectives of commercial rice farming, this innovations include improvement in production, technique of farming and various innovations to be applied in farming so as to achieve the self-sufficiency of commercial rice production. The three theories will enable us understand individual and collective behaviours. It can help us understand and bring out the points as to why individuals, groups and society in general move toward certain choices, depending on specific costs and rewards. It can enable us to understand the reasons for irrational behavior. Secondly, it enables us to understand the relevance of certain investments that are self-liquidating, salable and can increase quick turn over in the short run. And so the principle can assure farmers of investment into products that enable them create wealth and take part in other activities to raise income. Finally, the theories can help us know how best individual farmers seek to get the highest satisfaction from their economic decisions.

3.2 Sample Size of the Study

3.3 Population and Sampling Technique

3.4 Study Population

The study population is made up of farmers in the productive age of 18 – 65 years in the selected agricultural zones of Kano State. The population of rice farmers in Kano State is 358120 (KIPA, 2018). Comprising of both wet season and dry season farmers. The computation below is a representation of the sample size taken for this research from the population using the Taro Yamane's formula:

$$n = \frac{N}{1 + N(e)^2}$$

Where: n = sample size

N = Total Population e = Level of Significance $(0.05)^2$

$$n = \frac{358120}{1 + 358120\ (0.05)^2}$$

$$n = \frac{358120}{1 + 358120\ (0.0025)}$$

$$n = \frac{358120}{1 + 895.3}$$

$$n = \frac{358120}{896.3}$$

n = 399.55

n = 400

3.5 Sampling Techniques

Multi-stage sampling technique was used for the study because Kano State has a widely disperse population of farmers. The existing agricultural zones are Zone 1, Zone 2 and Zone 3, form a cluster each. The farmers in the three agricultural zones are all in cooperative societies. Each of these cooperative societies forms a cluster of twenty farmers who have received loan or credit. It is this category of each cluster of cooperative society of farmers that was selected for the study. In addition, the snow ball sampling technique was introduced because of the difficulty accessing beneficiary farmers. While the snow ball sampling which is chain-referral sampling was used in identifying other beneficiaries through information from beneficiaries. For example officials of RIFAN from different agricultural zones and KNARDA were used to locate other beneficiaries.

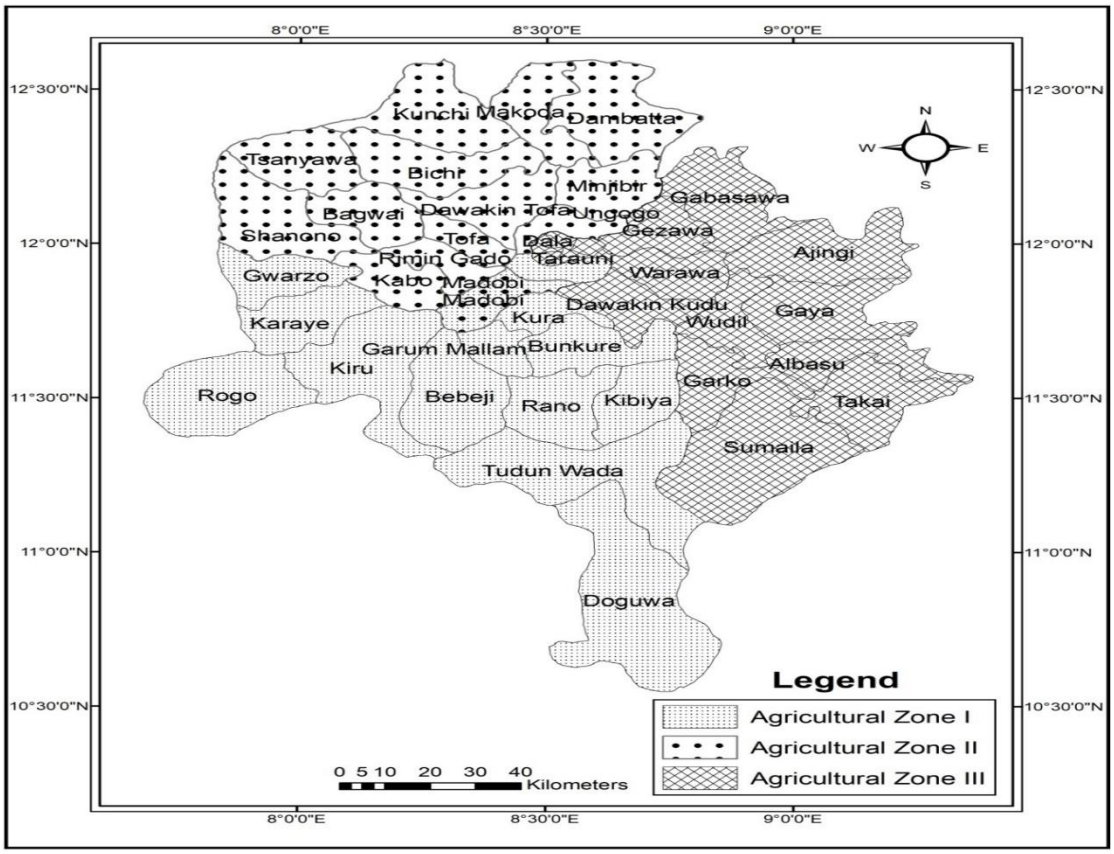


Figure 3.1: Map of Kano State showing various Agricultural Zones

Kano State has forty four local government areas. And the distribution of agriculture cuts across three (3) agricultural zones. These zones serve as the basis for this analysis.

Presentation of Data and Analysis

4.1 Model Specification and Estimation

To the impact of commercial agriculture credit scheme on commercialization of rice farming, the paper adopted the Household Commercial Index (HCI). Thus HCI has to do with the proportion of rice output to

sales. However the study of Gorvereh et al., (1999), Strasberg et.al. (1999); and von Braun et. al., (1994) stated that output can be measured by sale of production relative to the value of production.

i. $$HCI = \frac{\text{Gross Value of Rice Sales}}{\text{Gross Value of all Rice Production}} \times 100 \text{ - - - - - - - - - - - - - - - - - - -} \quad (3.1)$$

Conditions: A value of zero would signify that the household is totally subsistence oriented. The closer the index is to 100, the higher the degree of commercialization. Therefore the advantage of this approach is that commercialization is treated as a continuous sequence indicating the level of commercialization and non-commercialization.

4.2 CACS and Commercialization of Rice Farming in Kano State

Commercialization of rice farming is investigated based on the total land area cultivated for rice the share of the rice output for the market, the quality and quantity of hired labour, the use of inputs, and the level of mechanization.

Table 4.1: Amount of Loan Applied for and the Amount Disbursed

Amount applied	Number of Households	Amount disbursed	Number of Households
Less than ₦1, 000, 000	91(23.1%)	Less than ₦1, 000, 000	168(42.6%)
₦1, 001, 000 – ₦2, 999, 000	18(4.6%)	₦1, 001, 000 – ₦2, 999, 000	136(34.5%)
₦3, 000, 000 – ₦4, 999, 000	178(45.2%)	₦3, 000, 000 – ₦4, 999, 000	77(19.5%)
₦5, 000, 000 – ₦6, 999, 000	96(24.4%)	₦5, 000, 000 above	12(3%)
₦7, 000, 000 above	10(2.6%)		
Total	394	Total	394
Minimum loan applied	₦600, 000.00	Minimum loan received	₦400, 000.00
Maximum loan applied	₦7, 000, 000.00	Maximum loan received	₦7, 000, 000.00
Average loan applied	₦4, 187, 005.07	Average loan disbursed	₦1, 848, 477.15

Field Work (2021)

The findings in table 4.1 show the response rate on the amount of loan disbursed to the farmers. The minimum loan received was ₦400, 000.00, the maximum loan was ₦7, 000, 000.00 and the average loan disbursed was ₦1, 848, 477.15. The result of the finding shows that 42.6% (168) of the farmers got the loan of less than ₦1, 000, 000, 34.5% (136) farmers were able to get between ₦1, 001, 000 – ₦2, 999, 000, 77(19.5%) of the farmers got between ₦3, 000, 000 – ₦4, 999, 000 and lastly 12(3%) of the farmers secured a loan of ₦5, 000, 000 above.

According to the analysis above, most of the farmers (about 57.4%) only got between ₦400,000.00 – ₦2,000,000.00. 19.5% of the farmers got between ₦3, 000, 000 – ₦4, 999, 000 and only 3% got ₦5, 000, 000 above. The amount they got was not able to make them go commercial as expected a farmer need at least four million to go into commercial rice farming (KNARDA, 2021). Of course, credit is everything. The farmer needs credit to acquire more land for cultivation, he needs credit to acquire inputs such as fertilizer, herbicide, insecticide, he needs credit to hire labour and employ the use of machinery.

4.3 Household Commercialization Index

Household Commercialization Index is to determine household specific level of rice commercialization. The index measures the ratio of the gross value of rice sales by households in a year to the gross value of all rice produced by the same household in the same year expressed as a percentage. The index measures the extent to which household rice production is targeted towards the markets. This can be seen in equation (3.1).

Table 4.2: Disaggregate Household Commercialization Index Before and After CACS

Before			**After**		
Degree of commercialization	Number of household		Degree of commercialization	Number of household	
<=11%	33(8.8%)	NC	<=4.8%	80 (21.4%)	NC
<=49%	106(28.1%)	NC	<=48%	129 (34.2%)	NC
<=58%	110(29.1%)	PC	<=50%	46 (12.2%)	PC
<=66%	75(19.1%)	PC	<=53%	01 (0.3%)	PC
<=75%	29(7.7%)	FC	<=54%	01 (0.3%)	PC
<=85%	24(6.4%)	FC	<=55%	07 (1.9%)	PC
			<=57%	05 (1.34%)	PC
			<=58%	11 (2.9%)	PC
			<=60%	05 (1.34%)	PC
			<=62%	04 (1.1%)	PC
			<=66%	13 (3.44%)	PC
			<=70%	01 (0.3%)	FC
			<=74%	04 (1.06%)	FC
			<=75%	15 (3.97%)	FC
			<=76%	03 (0.8%)	FC
			<=80%	21 (5.57%)	FC
			<=83%	06 (1.59%)	FC
			<=85%	04 (1.1%)	FC
			<=87%	05 (1.3%)	FC
			<=88%	03 (0.8%)	FC
			<=89%	02 (0.5%)	FC
			<=90%	05 (1.3%)	FC
			<=91%	01 (0.3%)	FC
			<=92%	03 (0.8%)	FC
			<=94%	01 (0.3%)	FC
			<=95%	01 (0.3%)	FC
	377			377	

Table 4.3: Summary of Household Commercialization Index Before and After CACS

	Before			After		
	Degree of commercialization	Number of household		Degree of commercialization	Number of household	
	1 – 49%	139 (36.9%)	NC	1 – 48%	209 (55.4%)	NC
	50 – 70%	185(49.1%)	PC	50 – 70%	94(25%)	PC
	71 – 100%	53 (14.1%)	FC	71 – 100%	74(19.6%)	FC

Computed from Table 4.2

Before	Max output	Min output	Mean	Max output sold	Min output sold	Mean
	75bags	4bags	20.42bags	30bags	2bags	11.27bags
After	490bags	6bags	43.17bags	470bags	5bags	29.3bags

Field work 2021

Note: NC: No Commercialization; **PC:** Partial Commercialization; **FC:** Full Commercialization

The findings from table 4.4 revealed the degree of commercialization index of households before and after CACS. The result show that 36.9% of households degree of commmecialization is less than or equal to 49%, while 62.8% of household level of commercialization falls below or equal to 58%. The implication is that majority of the households were able to reach 58% level in the commercialization of their rice products. Secondly after accessing CACS it was observed that 55.4% of the households' degree or level of

commercialization is less than or equal to 48%. In addition, the findings show that only 44.9% of the households were able to produce rice to the extent of commercialization index of greater than or equal to 50% level.

From the results, it shows that after accessing CACS majority (209) of the households' level of commercialization is 48%. The implication is that the threshold is low if the farmers want to go commercial. And so the farmers will have to realize or achieve 52% more in production level in order to achieve full commercialization. Therefore the access to CACS have not increased the degree of commercialization to a higher level. The higher the degree of commercialization the better the farmers are going commercialization.

This finding is in line with key informant interview conducted with some of the farmers. From the interview conducted,

An informant opined that:

> "Yes, very high, not to say moderate. Because it is not their activities that improved the state something (activities) but yes moderate. Because it is not much. They did not give much too many people. So you don't expect the level of commercialization to be high because the amount given was low (R7).

In similar view, an informant put it that:

> "Not really, just partially not full commercial for export" (R1).

Similarly, an informant said that:

> "Yes. From what I have explained to you, you can see. But we are not sufficient enough to go commercial talk more of exporting but at least there is food in the market. It has improved the activities of buying and selling, that is trade" (R3).

Another informant added that:

> "No, nobody can say where our rice goes. Definitely we will produce not only for Kano people. People come from Lagos, all over the country. People come from Southern part of the country to buy rice product from here. We don't export. We have not really reached the level of export. But they come to buy from us" (R4).

An informant said:

> "Yes very well. Like I told you I stopped farming but when I collected the loan, then I continued farming because of the loan. And I know so many people, truthfully where not farming but when they collected the loan so many of them were involved in farming" (R3).

In another development, an informant respondent that:

> "And so since people that were involved and are now involved in farming then it has increased commercial production, increased food availability, income, health issues, and increased agricultural output. But it has not increased food to the extent of export rice. However Rice farming has not been able to reach the stage of exporting for now" (R4).

Another informant said that:

> "Yes it has. Because I am able to produce more than what I was producing. Yes, positively impacted to produce more, you get more money. You are able to feed better, you are able to pay your bills and whatever better. So it has impacted positively. No, nobody can say where our rice goes. Definitely we will produce not only for Kano. People come from Lagos, all over the country. Southern part of the country to buy rice product from here. We don't export" (R2).

Conversely, another informant said:-

> "It has increased food available and selling of rice. No, nobody can say where our rice goes. We don't export" (R6).

In another view by an informant, he stated that:

> "CACS has improved commercial food production. It has increase food availability. As the informants put it "It has increased commercial food production" (R3).

Another informant said

"In terms of food, I am able to feed, provide clothing for myself and family. Food production has increased. Not to that extent, but there are commercial activities taking places through sales and marketing" (R7).

Also an informant stated that:

"In terms of commercial food production, even rice production in commercial quantity it has helped. The other things are changing life of people in general i.e poultry farming. It has reduced my poverty 40% – 50%" (R8).

In support of the above, an informant said:

"It has not reached the level of export. That is why I am advising government to solve this problem because the CACS programme is helping small scale farmers. The government should do the programme continuously and be consistent. This will bring more farmers to participate in rice farming activity. The more farmers are coming in, the more there is production. So if government is doing the programme continuously and consistently, we would start export one time. The programme should be sustainable" (R5).

4.4 Total Area of Rice Cultivation in Hectares

Table 4.4: Total Area of Rice cultivation in Hectares (ha) Before and After CACS

	Before	After
Area	Response of households	Response of households
Less than 1 hectare	311(82%)	241(63.9%)
1hectare – 3hectares	64(0.5%)	49(13%)
4hectares – 8hectares	2(17.5%)	86(22.9%)
9hechares above	0(0%)	1(0.2%)
	377	377

Field work (2021)

Table 4.6 revealed the total area of rice cultivation before and after CACS. The findings reveal that before CACS, 82% of households cultivated rice less than 1 hectare, 0.5% cultivated between 1hectare – 3hectares, 17.5% cultivated rice on 4hectares – 8hectares. Majority of the households that made up 82% cultivated rice crop on less than 1 hectare.

This implies that the respondents' cultivated land area in producing rice is below the minimum requirement of going commercial. For a farmer to go commercial, the farmer must cultivate on an area of four hectares and above.

Secondly, after accessing CACS 63.9% of households cultivated rice on less than 1 hectare, 13% cultivated between 1hectare – 3hectares, 22. 9% cultivated rice between 4hectares – 8hectares, and lastly, only 0.2% cultivated on 9hectares and above. Majority of the households consisting of 63.9% cultivated rice less than 1hectare. This further shows that most of the farmers cultivated below the minimum requirements to go commercial. To go commercial it is expected that a farmer is to cultivate rice crop at a minimum of 4hectares. Based on this study the result shows that it is only 22.9% (86) households and 0.2% (1) household that cultivate rice on 4 - 8hectares and 9hectares above respectively.

4.5 Total Quantity of Rice Output

Table 4.5: Total Quantity of Rice Output in 72kg/bag Before and After CACS

Before		After	
Total output in 72kg/bag	Number of Household	Total output in 72kg/bag	Number of Household
Less than 10bags	87(23%)	Less than 10bags	10(2.6%)
11 – 20bags	121(32.1%)	11 – 20bags	78((20.6%)
21 – 30bags	120(31.8%)	21 – 30bags	101(26.7%)
31 – 40bags	17(4.5%)	31 – 40bags	42(11.1%)
41 – 50bags	23(6.1%)	41 – 50bags	42(11.1%)
51 – 60bags	7(2%)	51 – 60bags	58(15.4%)
61 – 70bags	2(0.5%)	61 – 70bags	17(5%)
		71 – 80bags	4(1.1%)
		81 – 90bags	3(0.7%)
		91 – 110bags	1(0.2%)
		111 – 120bags	15(3.9%)
		121 – 130bags	2(0.5%)
		131 – 140bags	1(0.3%)
		141 – 150bags	1(0.3%)
		151bags above	2(0.5%)
Total	377		377
Mean	20.42	43.17	
Min	4bags	6bags	
Max	75bags	490bags	

Field work 2021

From the findings, table 4.7 revealed that that before CACS, 23% of the households produced a total output of less than 10 bags, 32.1% produced between 11 – 20bags, 31.8% 21 – 30 bags, 4.5% of the households produced 31 – 40 bags. While there was a little increase to 6.1% that produced 41 – 50bags, which later fell to 2% and 0.5% that produced 51 – 60bags and 61 – 70bags respectively. Therefore we conclude that majority of the household respondents comprising of 32.1% produced a total quantity of 11 – 20bags and 31.8% produced 21 – 30bags.

Secondly, after accessing CACS, the findings revealed that 2.6% of the households produced less than 10bags, increasing to 20.6% of households that produced between 11 – 20bags, 26.7% produced 21 – 30bags. In addition 11.1% of the households produced between 31 – 40bags and 41 – 50bags respectively, 15.4% of the households increased production to 51 – 60bags, 5% produced 61 – 70bags, 1.1% produced 71 – 80bags. The result further showed that only 0.7% produced produced between 81 – 90bags, 0.2% produced a total quantity of 91 – 110bags, 3.9% of the households produced 111 – 120bags. Although the result further showed that less of the households comprising of 0.5%, 0.3%, 0.3% and 0.5% produced a total quantity of output of 121 – 130bags, 131 – 140bags, 141 – 150bags and 151 bags and above respectively. From the findings we conclude that majority of the household that constitute 26.7% produced a total quantity of 21 – 30bags.

Interview Presentation and Analysis

4.6. Analysis of Key Informant Interview

Table 4.6: Demographic Data of the Informants

Informant	Occupation	Age	Marital status	Qualification	Code
Informant 1	Farmer	58	Married	ND	R1
Informant 2	Farmer	64	Married	DVM	R2
Informant 3	Farmer	54	Married	B.Sc.	R3
Informant 4	Farmer	55	Married	B.Sc.	R4
Informant 5	Farmer	46	Married	ND	R5
Informant 6	Farmer	60	Married	Primary	R6
Informant 7	Farmer	53	Married	Diploma	R7
Informant 8	Farmer	55	Married	B.Sc.	R8

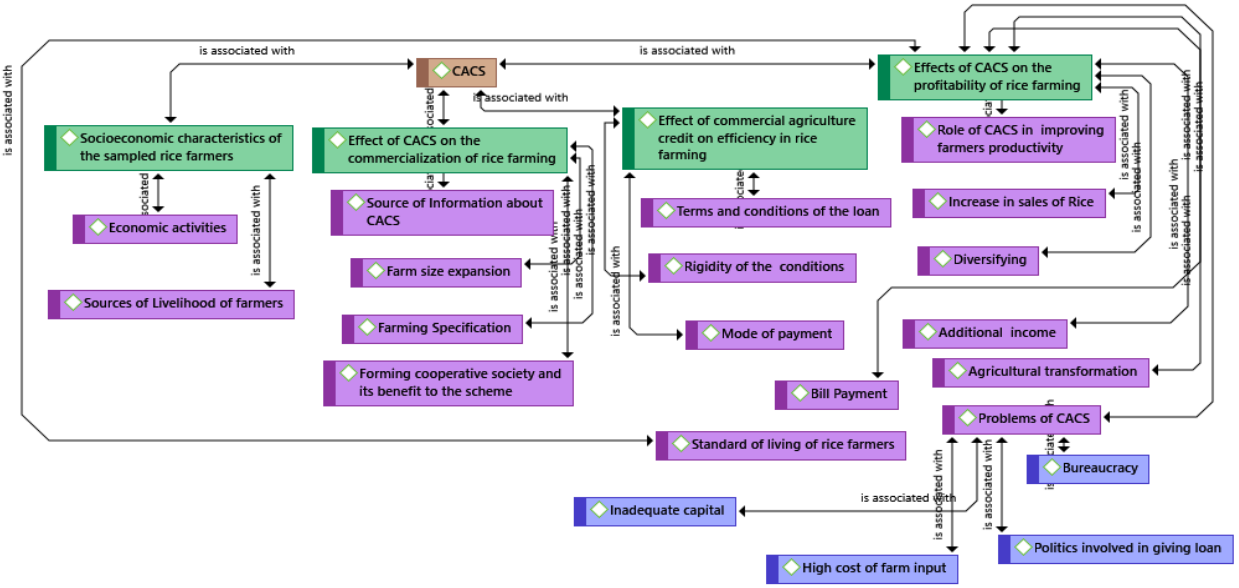
Source: Field work (2021)

The table above shows that eight informants were interviewed, seven famers and one public servant, their ages ranges from 46 to 60, all of the informants were married, their qualifications ranges from Primary, Diploma, ND to B.Sc and were coded R1 to R8.

Figure 4.1 Word Cloud

Field work (2021)
Figure 4.1 shows the word cloud, which was used to develop the themes and sub-themes.

Figure 4.2: Concept Map Developed



Field work (2021)

Figure 4.2 shows the concept map, four themes were developed that is Socioeconomic characteristics of the sampled rice farmers, Effect of CACS on the commercialization of rice farming, and Effects of CACS on the profitability of rice farming.

Theme two: Effect of CACS on the commercialization of rice farming

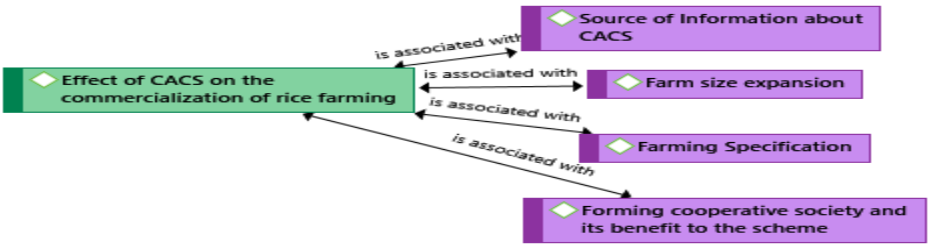


Figure 4.4: Effect of CACS on the commercialization of rice farming
Field work (2021)

The figure above shows Effect of CACS on the commercialization of rice farming with sub-themes such as Source of Information about CAC, Farm size expansion, Farming Specification and Forming cooperative society and its benefit to the scheme.

i. Source of Information about CACS

A question was asked on how they sourced their information regarding CACS activities and many informants said as follows;

An informant revealed that:

> "Yes the reason why I know about CACS is because I was a staff of KNARDA (Kano Agricultural and Rural Development Agency). Because it is here that the loan was given to me. Since I was working there, that is how I got information and by God's grace it has assisted/helped me" (R1).

Similarly, another informant stated that:

> "This one is easy because I was a civil servant working in the ministry of agriculture. We are the promitersive an inviting people to participate in it. That is why (how) I came to know about it" (R2).

Another informant added that

> "I was introduced. Another thing is that this loan was disbursed at Agriculture Development Programme (ADP) and I am a staff of ADP so I know about it through my office" (R3).

Also, another informant further said that:

> "I have seen the advertisement, the benefit of the CACS, so I applied. I was selected as one of the beneficiaries, I applied for rice farming and I was able to get the loan" (R4).

In support of the above, an informant said that:

> "Through other colleagues. Though it was announced. One of my friend introduced me to the programme since I am farming"(R5). This is in line with what another informant added "We were together, we were here in the office and at that time we were together with the Managing Director of KNARDA (Prof. Mohammed Daneji) and so he helped us to get the loan" (R6).

Another informant

> "I was enlightened concerning CACS. That it was a loan and the interest was not big" (R7).

Similarly an informant said that:

"Through advertisement of the programme on media. Then they sold the forms. We bought the forms through the banks. Union bank, UBA. That was how I applied for the loan and accessed the loan" (R8).

ii. Farm size expansion and Land typology

In an interview conducted, a question was asked whether CAC programme enabled them change environment because of the land typology.

An informant observed that:

"Yes, definitely I will have to change. This is because, where I was before I was farming based on upland farming. Since it is rice that I will want to start cultivating. Then I saw it necessary and best to change environment. That is why I went to an area where there is irrigation scheme like Bunkure, and Kura area to farm (or cultivate there). Since its rice cultivation and rice is mostly lowland. And so in this area where I decided to go and cultivate, even if there is no rain water will be released from the dam and no problem. And so Bunkure is in zone I and it is a lowland area" (R1).

Similarly, another informant said that:

"I had enough land to cultivate and I was satisfied with it. So there was no reason for me to change. I was in Dunkure"(R2, R7& R5).

Another informant added that:

"Yes, maybe I am farming in zone 2 for the past 2-3 years I went to zone 1 to farm rice there. Precisely, I am farming in Kwanar Dangora and it is in zone 1" (R3).

Another informant said:

"No, I have not changed environment. But I did then, I changed my place of farming because I was a bit farming small piece of land. But after accessing the loan I was able to expand my activities. Well in the same zone, I was farming in Kura (zone 1) in a small area of land. But now that I have accessed the loan, I was able to hire land to farm in Garun Malam, and the cost is N40, 000, N30, 000 and N20, 000 per hectare, it depends" (R4).

However, an informant observed that:

"Yes I was actually in Garko before, then I changed to Kadawa then I left for Watari and then another village called Kafin Siri in Garko. And I progressed beyond my inspiration" (R6).

An informant said that:

"They did their farming in one place and they did not change environment".

Another informant further stated that:

"No, still I am planting from zone 1 which is Rano zone. But only where the CACS has helped is only when I increased my farm size. I was cultivating 1 hectare but now I am using 2 – 3 hectares. But I don't have any problem in zone 1. Zone 1 is Rano zone, and it comprised of about 15 LGAs, where I am planting this crops" (R8).

iii. Farming Specification

Rice specification is very paramount for optimum harvest.

An informant interviewed revealed that:

"You know when you are farming rice there are rules if you want a good harvest and the reason is that yes definitely I will have to change. This is because, where I was before I was farming based on upland farming. Since it is rice that I will want to start cultivating. Then I saw it necessary and best to change environment. That is why I to an area where there is irrigation scheme Bunkure, and Kura area to farm (or cultivate there). Since its rice

cultivation and rice is mostly lowland. And so in this area where I decided to go and cultivate, even if there is no rain water will be released from the dam and no problem. And so Bunkure is in zone I and it is a lowland area" (R1).

Another informant said that:

"Of course if you are farming rice, there has to be specification. You don't just go on sandy soil to plant your rice. You need where there is water. And you don't depend on the rainy season entirely. If you depend on the rainy season you will not go anywhere. Because you need water to augment. If you want your rice production to be profitable you have to plant lowland rice (that is to plant in the lowland area) because it yields more where you have better possibility to pay your loan and get something out of it. So you have to cultivate where there is water, where the soil is really good. A land that has a reasonable water retention. That is loamy soil. So that is what you need, there is no need for me to change. But if you collect the loan and go to a place where the soil is sandy, there is no enough water of course you are not going to cultivate adequately. So you will have production challenge" (R2).

Another informant added that:

"Yes there are a lot of such specifications. As you know in zone 2 the rainfall there shows that you have to plant short term variety that is variety that will not carry you 90-100 days but in zone 1 they have an extended rainfall that you can plant a crop that can survive up 100-120 days. So there is differences, so the rainfall in zone 1 is lower than the rainfall in zone 2" (R3).

In addition to the above, an informant said:

"Yes, a particular area like Jarman Baka and Kadawa irrigation scheme. The one in Kadawa is about 6 hectares. While that of Jaman Baka is $1^{1}/2$ hectares" (R4).

However, another informant added that:

"No, the type of soil is good. Because we use to go there to cultivate so many crops there. Wheat and sugarcane cultivation is good here. Zone 3 is low land area because they have a Dam there. We use Dam and tube well" (R5).

On the contrary, an informant said that:

"The land size is in acre and so some acres you pay N30, 000 some N35, 000. It depends on the location of site like now in a site of farm land, a place we call it Barnawa, Garip, Babba. You pay an acre N30, 000 or N35, 000" (R6).

Table 4.7: Code coding summary table

Code	Source of Information about CACS	Farm size expansion	Farming Specification	Forming cooperative society and its benefit to the scheme
R1	1	1	1	1
R2	1	1	1	1
R3	1	1	1	1
R4	1	1	1	
R5	1	1	1	1
R6	1	1	1	1
R7	1	1		1
R8	1	1		
Total	8	8	6	**6**

Field work (2021)

i. Terms and conditions of the loan

There are many conditions put in place which aimed at promoting efficiency and effectiveness of rice farming in Kano. The interview conducted an informant further revealed that:

> "Yes, at that time what we were told to do, first after giving us information, on the radio, we were given more explanations and information on what to do. And again, and so we were told to buy form which was sold to us. And so we bought the form. And also there are rules and regulations which I have forgotten that you must follow before the loan is given to us. First you must be in a cooperative society, there must be a guarantor to sign for you but the other ones that are many I cannot remember. Secondly, they also made mention of interest rate but I cannot remember at what percent. Also, they gave us specification on the type of bank to open an account with. That is Access Bank. Because it is through Access Bank that we were given the loan" (R1).

Another informant added that:

> "Yes I have to be in a cooperative, I can remember this but I can't remember the rest you have to be a farmer, in fact not any farmer, and a practicing farmer. Yes you have to have a bank, and then there is the interest rate of I think a simple digit, I can't remember how and then that is all. That is all I can remember. That is you have to be in a cooperative, I can remember this but I can't remember the rest you have to be a farmer, in fact not any farmer, and a practicing farmer. Yes you have to have a bank, and then there is the interest rate of I think a simple digit, I can't remember how and then that is all. That is all I can remember" (R2).

Equally, another informant added that:

> "One of the conditions is that you have to come from a cooperative society. You have to be a member of a cooperative society. And you have to make sure if they give you, you will pay them back and you will utilize them in farming" (R3).

Likewise, an informant buttressed that:

> "They said within two years we should repay it back, so as to give other farmers to benefit. Some have started paying back, others have not started. There is no interest on it. They have the account so we can repay the loan. So you have to notify them and then you pay by writing a letter to them indicating you want to repay it. So they will give you the account number and the bank. To go and start repaying on that account" (R5).

Consequently, an informant revealed that:

> "You have to site the acreage you want to farm and to truly issue your membership of cooperative group and then you apply. These were the conditions we submitted before accessing the loan" (R4).

As a result, an informant also added that:

> "The conditions is that you must pay back. We were not told whether we would pay complete or partial. We had to open account with access bank as part of the condition" (R7).

Moreover, another informant said:-

> "They give conditions that the loan is a loan and you are settling it after two (2) years. So you can settle the loans monthly, for every season but at least within the two (2) years. You have to settle the loan. And they have given us training on the ways we can refund the loan" (R8).

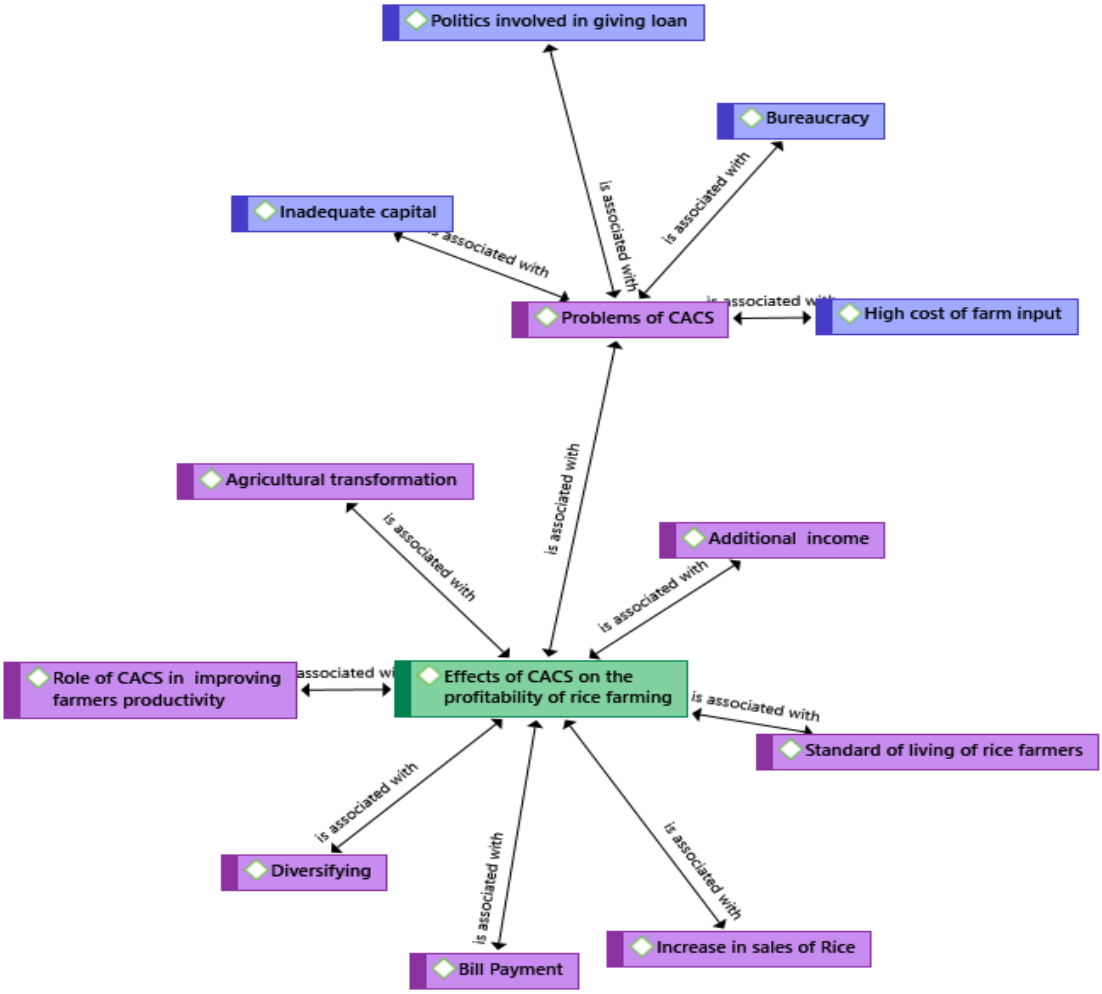


Figure 4.5: Effects of CACS on the profitability of rice farming

Figure 4.5 shows the effects of CACS on the profitability of rice farming with sub-themes such as Role of CACS in improving farmers productivity, Diversifying ,Additional income, Standard of living of rice farmers, Increase in sales of Rice, Bill Payment, Agricultural transformation.

i. Role of CACS in improving farmers productivity

A sub-theme was formed on role of CACS in improving farmers' productivity.

An informant interviewed revealed that:

> "Since before now I was cultivating rice and at that time I was staying in Rano and so I was in the headquarters. And in the time of life, things change. And if you are engaged in farming, and you are close to where you are cultivating your crop you may encounter serious challenges. But when I looked for transfer to come to Kano and I got this loan, then I tried to start farming in Bunkure and I continued farming. Since before then (before access to the loan) I was farming, then I stopped. But when the loan came it is better to go back and continue with my farming" (R1).

Another informant said that:

> "Yes, it did. Because when I collected it I was able to farm more than I was farming before the CACS. And when you farm more than you are farming then you get more profit. Possible little or more profit" (R2).

However, another informant said that:

"Yes of course. May be before the loan, I can only produce may be 20-30 bags of crops of rice grain but now I can produce up to 100 bags of rice grain or more than that. And so it had improved a lot. In terms of income yes, yes….. when i sold the produce it improved my income. May be before then, when I sell my crops I can only get N100, 000 to N120, 000 to N130, 000. But now i can sell more and get more than N500, 000 above" (R3).

In addition, an informant said:

"Of course yes, before then (that is before access to CACS loan) I was farming in a small piece of land. But now that I got funding, I was able to expand my farming activities. Seriously, it has increased my income tremendously" (R4).

Likewise, an informant said that

"Yes, since the money is not enough for us. We improve small. We are praying to repay back" (R5).

In support of the above, an informant said:

"Yes before I encountered challenges. But when I understood it, then I progressed and improved as it is supposed to be. It was not difficult, in farming no. Yes it is business and marketing sale. I got improvement in my sales and business" (R6& R7).

Finally, an informant said that:

Of course as I said earlier you know it helped me in settling the school fees of my children, then it helped me adjust and within two to three years I was able to improve my poultry house and my farming. As I told you earlier, before I use to cultivate 1 hectare, but now I can use up to 2 – 3 hectares or 2 ½ hectares" (R8).

ii. Role of CACS in commercial and increased food production

The interview revealed that CACs has impacted greatly on rice farming and led to commercial rice farming. As informant said:

"Yes very well. Like I told you I stopped farming but when I collected the loan, then I continued farming because of the loan. And I know so many people, truthfully where not farming but when they collected the loan so many of them were involved in farming" (R3).

In another development, an informant respondent that:

"And so since people that were involved and are now involved in farming then it has increased commercial production, increased food availability, income, health issues, and increased agricultural output. But it has not increased food to the extent of export rice. However Rice farming has not been able to reach the stage of exporting for now" (R4).

Another informant said that:

"Yes it has. Because I am able to produce more than what I was producing. Yes, positively impacted to produce more, you get more money. You are able to feed better, you are able to pay your bills and whatever better. So it has impacted positively. No, nobody can say where our rice goes. Definitely we will produce not only for Kano. People come from Lagos, all over the country. Southern part of the country to buy rice product from here. We don't export" (R2).

Conversely, another informant said:-

"It has increased food available and selling of rice. No, nobody can say where our rice goes. We don't export" (R6).

In another view by an informant, he stated that:

"CACS has improved commercial food production. It has increase food availability. As the informants put it "It has increased commercial food production" (R3).

Contrary, an informant put it

"Not really, just partially not full commercial for export" (R1).

Another informant said

"In terms of food, I am able to feed, provide clothing for myself and family. Food production has increased. Not to that extent, but there are commercial activities taking places through sales and marketing" (R7).

Also an informant stated that:

"In terms of commercial food production, even rice production in commercial quantity it has helped. The other things are changing life of people in general i.e poultry farming. It has reduced my poverty 40% – 50% " (R8).

In support of the above, an informant said:

"It has not reached the level of export. That is why I am advising government to solve this problem because the CACS programme is helping small scale farmers. The government should do the programme continuously and be consistent. This will bring more farmers to participate in rice farming activity. The more farmers are coming in, the more there is production. So if government is doing the programme continuously and consistently, we would start export one time. The programme should be sustainable" (R5).

The CACS was able to improve commercial actitvities in Kano as the Informant said:

"Yes very well. Increased food, sales and marketing. (And there is food availability in the market). Before now food was not expensive. But still even with food availability, it is now expensive" (R1).

Similarly, an informant said that:

"Yes. From what I have explained to you, you can see. But we are not sufficient enough to go commercial talk more of exporting but at least there is food in the market. It has improved the activities of buying and selling, that is trade" (R3).

Another informant added that:

"No, nobody can say where our rice goes. Definitely we will produce not only for Kano people. People come from Lagos, all over the country. People come from Southern part of the country to buy rice product from here. We don't export. We have not really reached the level of export. But they come to buy from us" (R4).

However, another informant said:

"Yes, very high, not to say moderate. Because it is not their activities that improved the state something (activities) but yes moderate. Because it is not much. They did not give much too many people. So you don't expect the level of commercialization to be high because the amount given was low(R7).

ii. Diversifying

The interview conducted further revealed that after Accessing CACS whether they were able to do some activities in addition to rice farming.

Based on the interview, an informant revealed that:

"It is only rearing of livestock" (R1).

Another informant added that:

"I have not being able. I have a large family so you see to feed the family is also another activity. So apart from the amount, this was not enough for me to go into other things. If I had enough money I will cultivate, if I can access ₦10 million and then work for it. What I accessed was small compared to my capability. I sell what I farm, I eat from it, and then I sell the remaining. Usually that is why it is commercial. The objective of the scheme is to go commercial agriculture so that the majority of what you farm you sell. So that you improve your income" (R2).

However, an informant said that:

"No I don't do anything. I just farm. I am involved in buying and selling. I purchase certain amount of rice before I sell it when I process it, I leave it to a certain period when the price of rice rise, them I sell it, this has a way of improving my income, period when the price

of rice rise, them I sell it, this has a way of improving my income, so it has generated more income for me" (R3).

Likewise an informant further buttressed that

"Basically I have not been involved in any off farm activity" (R4).

In support of the above, an informant said:

"No I don't have any off farm activities. No activities apart from farming. Because the money is not enough for me. So I cannot do other activities. We rearing of children. Though I have interest to do it" (R5).

Conversely, an informant put it that:

"I am involved in poultry, and I have a car that does, commercial transport for me like I told you earlier on"(R6). Another informant said "It is sales and marketing, then livestock farming" (R7).

Finally, an informant highlighted that:

"Yes like I told you the poultry house, secondly, I use the loan or proceeds to make local contribution which I did. So I was able to buy a quarter (¼) of an acre which is two (2) basins which is 40 x 100 meters, through that contribution" (R8).

iv. Standard of living of rice farmers

The interview showed that the CACS loan has improved standard of living of rice farmers in areas of children's school fees, solved health issues and increased feeding.

The informant respondent by saying that:

"Yes, very well. (In most times my children most of them are reading. In the area of good health I am doing very well with my family, and eating has never been a challenge"(R1).

In the same vein, another informant added that:-

"Yes, it has. I paid school fees of my children. I am in a better position to pay school fees of my children, than before. I have been able to do more sales of the paddy rice" (R2).

In support of the above, an informant further said that:

"No no, in eating, I eat. Before received the loan I cannot eat rice every day, but now I can eat rice every day and I pay school fees of my children, I have fourteen (14) children, they all go to private school and I pay them from what I earn. Yes, since I have children I use to pay their school fees, and solve health issues" (R5 and R3).

Another informant said:

"Of course, yes exactly, so long as you have money in your hand. You enjoy more life when you have the means. Before I was farming in a small piece of land. But now that I got funding, I was able to expand my farming activities. Seriously, it has increased my income tremendously" (R4).

In support of the above, another informant said:

"Yes, very well. In everything you asked, me and my family household have progressed and improved more than we were before. Some have finished University, some NCE. And some have finished primary. Just some few months, my children finished NCE. With master degree too. And secondary too, my daughters finished from there. And one of the girls is going to NCE and it is because of CACS" (R6).

Another informant said

"Yes, I have gotten income to the extent of paying the school fees of my children, pay for hospital bills for my children. I eat good meals and food better than before" (R7).

Finally, an informant said:

> "Of course yes, it helped me to pay and settle my children school fees without any difficulties. And at times before we use to go and borrow some things but now I have adjusted to all that. I am able to maintain myself without going out to borrow or get loan. Yes, very well. Honestly speaking it has done so. Because in all my activities, it is put my house in order, even my children, they have changed. Some of them are going to school by leg, but I have been able to buy them bike, and such things. They are gaining. So government should encourage giving out and collecting the loan. It has reduced my poverty, which I can say at least 50%.(R8)

v. Increase in Sales of Rice

The interview conducted also show the response of the informants on the issue of increased in sales of Rice. An informant interviewed said that:

> "Yes, I do sell. Sometimes in life as it is, this type of rearing am doing is work because of sales. If you are sitting and you find out that you are in need of something, and you don't have money then you can pick some animals and sell it in the market. This is to solve your needs. And for rice sometimes you can be eating some part of your rice, you can sell some when the need arises" (R1).

Another informant narrated and stated that:

> "I have been having more sales in processed rice than the sales of paddy rice" (R2).

Another informant said

> "Yes very well. I sell rice at home and farm and poultry and I have car taxi on the road. At least with this if you don't get today, you shall get tomorrow" (R6).

Also an informant indicated that:

> "Yes even now coming as a cooperative enable us to aggregate our outputs after harvest then we invite the company to buy it in kg" (R8).

vii. Agricultural transformation

Another question was asked whether the CACS loan has led to transformation of farming output. From the interview, an informant revealed that:

> "Yes very well. This is because this kind of success and growth like this is certain just as I explained to you earlier on. Before I started involving myself in farming and rearing of animals most times I would have to buy in the market. But now since I am involved in farming I don't think there is need to buy it in the market. For instance, before and during festival periods like Sallah and child birth, I would have to take from my ban and reserve to use it. So you can see that there is growth improvement and success. It has reduced poverty very well and we eat very well three square meals. We are not looking for what to eat at home. We all have clothing, we buy and wear our clothes, no challenges by the grace of God. For the family and all that they need I have been able to provide for them. And to buy drugs solve health challenges have been easy" (R1).

Another interviewee put it that:

> "It has reduced poverty improved my family, health, easy access to food consumption and eating is not a challenge. Once you have an increased income that income must affect all things. Your capability to pay school fees, your capability to feed yourself, your capability to help others, and if possible to give charity. It all helped once you have your capability to increase income. Yes, very high, not to say moderate. Because it is not their activities that improved the state something (activities) but yes moderate. Because it is not much. They did not give much too many people" (R2).

An informant also said that:

> "Obviously it has transformed my life seriously. May be from what I earn, I pay school fees of my children and I repaired my house. From how I am eating rice and other things

my children are well fed and I got married again from the money I got from loan, and from the investment I made in rice" (R3).

As an informant put it:

"However, the transformation has played vital role on farmer's lives. "Yes of course it contributed to improving family health, clothing, food, water, yes it has transformed my life, house and well being" (R4).

Another issue raised by the informant is that:

"Yes, we boost our farming activities. But it has **reduced poverty for us**. Now we are in a situation of everything is doubling even in the farming. Then we bought fertilizer not more than N3, 500 to N4, 000. But now you will buy a bag of fertilizer ranging between N10, 000 and up to N13, 000" (R5).

Another informant said that:

"I only pay water, and light bills, I am in the village. I was able to build my house and I have my own farm land" (R6).

An informant further said that:

"Yes, we have clothing, we eat well and there is progress in myself, my family and the entire household. If you get as the head, it means the entire household have gotten. It has reduced poverty" (R6 and R7).

One of the interviewees put it that:

"Yes very well. It has reduced poverty, improved health, eating food, easy access to food, shelter and clothing, buy assets etc. Access to improved health and solving health challenge" (R1).

4. 7 Discussion of Findings

i. Household Commercialization Index

Before CACS, majority (62.8%) of the households were able to reach 58% level in the commercialization in rice farming. After accessing CACS majority (55.4%) of the households' degree of commercialization is below 48%. This implies that the CACS loan has not significantly contributed to increase in the degree of commercialization of rice farming in Kano State. Consequently based on international standard it is expected that the commercialization index should be 50% and above. The closer the index is to 100, the better it is to going commercial.

ii. Total area of rice cultivation

The findings reveal that before CACS, 82% of households cultivated rice less than 1 hectare, 0.5% cultivated between 1hectare – 3hectares, 17.5% cultivated rice on 4hectares – 8hectares. Majority of the households that made up 82% cultivated rice crop on less than 1 hectare. This means that the respondents' cultivated land area in producing rice is below the minimum requirement of going commercial. For a farmer to go commercial, the farmer must cultivate on an area of four hectares and above. Also after CACS, 63.9% of households cultivated rice on less than 1 hectare. To go commercial it is expected that a farmer is to cultivate rice crop at a minimum of 4hectares. Based on this study the result shows that it is only 22.9% (86) households and 0.2% (1) household that cultivate rice on 4 - 8hectares and 9hectares above respectively.

iii. Output of rice paddy

Before CACS, majority of the household respondents comprising of 32.1% produced a total quantity of 11 – 20bags and 31.8% produced 21 – 30bags.

Secondly, after accessing CACS, majority of the household that constitute 26.7% produced a total quantity of 21 – 30bags. based on the international standards it is expected that for households respondents to go commercial, production output must be between 35 – 40bags and above to achieve full commercialization.

5.1 Conclusion

The commercialization of rice farming in Kano State is low considering that most of the farmers are smallholders. And so little attention is paid towards ensuring and boosting rice farming productivity. Therefore, this situation continues to affect the output. The low output level is as a result of poor utilization of inputs and variation in farming activities to increase production output. The study concludes that despite the availability of CACS loan, farmers have not been able to go commercial. This can be attributed to the low disbursement of CACS loan and lack of capacity to utilize the available loan efficiently. The households were not able to utilize the resources efficiently, and so giving birth to under-utilization of available resources.

Based on the findings of this study, it is concluded that the rice farmers in study area were technically, allocative, economically inefficient. However, rice farming was profitable given to the available resources and livelihood activities of farmers. Yet the poverty status of farmers was very high.

On the global perspective, the study was able to establish there is no relationship between commercial agriculture credit scheme and rice farming, secondly that commercial agriculture credit scheme has not impacted on efficiency rice farming in the field of development economics and finance, the rice farmers are not economically efficient (or they are economical inefficient) leading to underutilization of resources, contrary to the view by other scholars there is a relationship between credit scheme has impact on rice farming production. Although the CACS loan has improved profitability of farmers, has not reduced poverty. Although poverty causes underutilization of resources.

Furthermore, based on the literatures reviewed in Nigeria, to the best knowledge of the researcher, the researcher has not come across studies that is in commercialization that assessed a credit scheme that indicates if the farmers (or households) were going commercial. Also the research has not come across similar research that indicates the economic efficiency of rice farmers concerning the CACS policy. However the study adopted this strategy in order to fill the existing gaps in the literatures of economics in Nigeria and particular in Kano State.

5.2 Recommendations

In order to sustain and improve commercialization in rice farming systems in the study areas, the following suggestions and policy recommendations are as follows:

The commercialization analysis reveals that households did not to go commercial. Most of the households were going on partial commercial and not full commercialization. This could be attributed to the fact that the CACS loan as an input was very low compared to the international standards, the use of inputs was underutilized such as seeds, the use of total area of rice cultivated, production output, sales output. The use of inputs did not meet international standard. As such the need for policy makers to be genuine to enhance self-sufficiency and commercialization to ensure diversification and export of rice product. Government should be able to allocate more production resources to farmers, because this can enhance the realization of self-sufficiency in rice production.

On the other hand the lack of commercialization is been constrained by the identified challenges experienced by farmers such as high cost of inputs (i.e. fertilizer, herbicides, labour), high cost of seeds, the pricing of rice product to meet market value, poor road access to market, their rice product does meet the market needs and the farmers always experience effective promotion of their product. Therefore government should have a standard measure to promote domestic rice product to make it marketable and commercialized. It is not enough to fund the credit scheme but to add value to rice farming. This can be done by engaging the farmers directly that benefitted from the scheme. Government should not use a medium because this hinder the smooth effective process between government and the farmers.

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