IMPACT OF NIGERIAN AGRICULTURAL COOPERATIVE AND RURAL DEVELOPMENT BANK LOAN (NACRDB) ON FISH FARMING ENTERPRISES IN OGUN STATE, NIGERIA

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ABSTRACT

This study examined the impact of Nigerian Agricultural Cooperative and Rural Development Bank (NACRDB) loan on fish farming enterprises in Ogun State. Random sampling technique was used to select 100 fish farmers (60 beneficiaries of the NACRDB loan and 40 non-beneficiaries) from the four agricultural extension zones in Ogun State. Structured interview guides and personal interview were used to collect information from the respondents. The data collected were analyzed using descriptive and inferential statistics. Hundred percent of the beneficiaries were cooperative members while 47.5% of the non-beneficiaries were not in any cooperative society. It also showed that there was a significant difference between the income level of the beneficiaries and non-beneficiaries. Major constraints hindering fish farming in the study area include high cost of feeding, inadequate finance and poor marketing channel. The study recommends that Government should increase the amount of loan allocated to the agricultural sector and invariantly the fisheries sector, monitoring of the loan to ensure that it is used for its purpose and provide a standardized law to regulate the price of fresh fish in the market.

Keywords: credit facility, constraints, cooperatives, aquaculture enterprise, profitability

INTRODUCTION

Aquaculture is the fastest growing livestock production sector in Nigeria, with a growth of about 29% in 2006 alone, and with prospects of continued growth. This is because demand for fish is on the increase in line with population growth while catches from fishing are on the decline, even globally (Delgado *et al*., 2003). Fishing like other hunting activities has been a major source of food for human race and has put an end to the unsavory outbreak of Kwashiorkor and so on. It accounts for about one fifth of world total supply of animal protein and this has risen five folds over the last forty years from 20 million metric tonnes to 98 million metric tonnes in 1993 and projected to exceed 150 million metric tonnes by the year 2010 (FAO, 2002).

A supply of the deficit of 2.04 million metric tonnes is required to meet the ever increasing demand for fish in Nigeria. This large deficit between the demand (2.66 mmt) and supply (0.62 mmt) of fish is augmented by massive importation of frozen fish and consequently effect on the exchange earnings of the nation economy (FDF, 2008). Most of the fish consumed by Nigerian citizens, who account for 55% of the total protein intake sources, is from fishing in our natural water bodies (marine, estuarine, lacustrine and riverine biotype) which is far being over fished as Total Allowable Catch (TAC) has always exceeded the Maximum Sustainable Yield (MSY) of 415,000 Metric tonnes (Olaoye *et al*., 2007).

Traditionally, capital for investment in agriculture comes from two potential sources, namely, personal savings of the farmer and farm credit. However, because of low yield and price uncertainty associated with farming in developing economies, farmers are often entangled in the vicious cycle of low output, low income, low savings and low investment, which again result in low output- a concept often referred to as the vicious cycle of poverty (Nwankwo, 2005). Therefore, farm credit either from the formal or informal sources remains the major means of improving farm capital

investment. In response to this need, the Nigerian government established amongst others the Nigerian Agricultural and Cooperative Bank (NACB) in 1973 (now Nigerian Agricultural Cooperative and Rural Development Bank, (NACRDB) to cater for the credit needs of the agricultural sector.

It is generally agreed among researchers and policymakers that lack of access to adequate credit can have significant negative consequences for various aggregate and household level outcomes, including technology adoption, agricultural productivity, food security, nutrition, health, and overall household welfare (Diagne and Zeller, 2001).

Farm credit has for long been identified as a major input in the development of the fisheries sector in Nigeria. Credit is the process of obtaining control over the use of money, good and services in the present in exchange for a promise to pay at a future date (Ogunleye, 2000). It is a capital resources used in production that is a monetary resource, which can take the form of money in cash or bank draft or in kind as a form of biological and physical purchased and supplied to producers.

To bridge this gap in knowledge, this study empirically relates access to loan and the impact of Nigerian Agricultural Cooperative and Rural Development Bank loan on fish farming. It is against this backdrop that this study aims to examine the productivity, output and profit level of the beneficiaries and non-beneficiaries of fish farming in Ogun State of Nigeria.

METHODOLOGY

Study area

The study was conducted in Ogun State in south- western Nigeria. The state has an estimated population of over 3 million people according to National Population Commission (N.P.C, 2006). The state is located in the rainforest vegetation belt of Nigeria within longitude 2^{o} $45^{'}$ E and 3^{o} $55^{'}$ E and latitudes 7^{o} $01^{'}$ N and 7^{o} $8^{'}$ N in the tropics.

It is bounded in the west by Benin Republic, in the south by Lagos state and Atlantic Ocean, in the east by Ondo State, and in the North by Oyo and Osun States. It covers a land area of 16,409.28 square kilometers, less than two percent (2%) of the country's landmass (Olaoye *et al.,* 2007). The rainy season starts around the middle of March and continues until late October. The dry season starts in November and lasts until February in most locations in the state. Rainfall ranges between 1600mm and 900mm annually. The state is warm throughout the year with a temperature of between 28^{o}C and 35^{o}C. Humidity is between 85 percent and 95 percent (Oloruntoba and Adegbite, 2006).

The study covered all the four agricultural extension zones as classified by the Ogun State Agricultural Development Programme (OGADEP). The state was divided into four Agricultural extension zones namely: Abeokuta, Ilaro, Ijebu- ode and Ikenne (OGADEP, 2005).

The four agricultural zones are well known as best ecological suitable areas for fish production and hence the state is referred to as the basket of fish for the nation because of abundance of wetland with annual growth rate of 3% per annum.

Data collection and sampling technique

Random sampling method was used to select Nigerian Agricultural Cooperative and Rural Development Bank loan beneficiaries from all the four agricultural zones in the state. Productive fish farmers that benefited from NACRDB loan were purposively selected from all the zones to give a total of 60 beneficiaries. 40 non-beneficiaries respondents were also selected using simple random sampling technique. The selection was based on the frame survey collected from extension agents of Ogun State Agricultural Development (OGADEP) that is registered fish farmers in the study area. Both primary and secondary data were used during the study. Respondents were interviewed using well structured interview schedule; secondary data was obtained from records provided by Nigerian Agricultural Cooperative and Rural Development Bank customers guide, annual reports and personal communication with Nigerian Agricultural Cooperative Rural and Development Bank's officials.

Analytical techniques

Data obtained from structured interview schedule was subjected to descriptive, inferential statistical and budgetary analysis (profitability ratios). Descriptive statistics for this study include frequency, percentages, mean, standard deviation and hypothesis.

RESULTS

Socio-economic profile of the respondents

Table 1 shows the ages, marital status, educational qualification and fishing experience of the fish farmers. Majority of the respondents were within the age group of 41 and 50years, and these accounted for 53.3% and 35% for the beneficiaries and non-beneficiaries. Most (80% and 70%) of beneficiaries and non-beneficiaries respectively were

married. Education is an important factor which can influence farm productivity and determine farmer's access to loan and repayment, level of education according to the study showed that 100% and 100% of beneficiaries and non-beneficiaries respectively have one form of education or the other. This finding substantiated the findings of Lawal and Idega (2004) who observed that the level of education attended by the respondents to a large extent determine the strategies which he/she may use to solve his/her marketing problems and to adopt new innovations without difficulties that will increase his profit as soon as they became available to him/her. From the results, it was showed that Christianity was mostly practiced than any other religion as majority (63%, 60%) of the benefiting and non-benefiting fish farmers respectively were Christians. The average household size in the locality was found to be 5 persons while mean fish farming experience showed 10.8years and 4.0years for beneficiaries and non-beneficiaries respectively. Many (40% and 45%) of the beneficiaries and non-beneficiaries respectively went into fish farming due to its profitability.

Table 1: Socio-economic characteristics of the respondents

	Beneficiaries				**Non-beneficiaries**			
Age (Years)	**Frequency**	**Percentages**	**Mean**	**SD**	**Frequency**	**Percentages**	**Mean**	**SD**
21-30	0	0.0			2	5.0		
31-40	7	11.7			10	25.0		
41-50	32	53.3			14	35.0		
51-60	17	28.3			12	30.0		
61&above	4	6.7			2	5.0		
Total	**60**	**100.0**	**48.9**	**7.218**	**40**	**100.0**	**45.98**	**9.439**
Gender								
Male	46	76.7			28	70.0		
Female	14	23.3			12	30.0		
Total	**60**	**100**			**40**	**100**		
Marital Status								
Single	2	3.3			6	15.0		
Married	48	80.0			28	70.0		
Divorced	2	3.3			2	5.0		
Widow	8	13.3			4	10.0		
Total	**60**	**100.0**			**40**	**100.0**		
Educational level								
No formal education	0	0.0			0	0.0		
Adult education	2	3.3			0	0.0		
Primary education	5	8.3			7	17.5		
Secondary education	33	55.0			21	52.5		
Tertiary education	20	33.3			12	30.0		
Total	**60**	**100.0**			**40**	**100.0**		
Religion								
Christianity	38	63.0			24	60.0		
Islam	19	31.7			13	32.5		
Traditional	3	5.0			3	7.5		
Total	**60**	**100.0**			**40**	**100.0**		
Household size								
0-3	12	20.0			2	5.0		
4-6	34	56.7			30	75.0		
7-9	14	23.3			8	20.0		
Total	**60**	**100.0**	**5.0**	**1.730**	**40**	**100.0**	**5.0**	**1.536**
Fish farming experience								
0-5	12	20.0			18	45.0		
6-10	29	48.3			15	37.5		
11-15	9	15.0			3	7.5		
16-20	7	11.7			4	10.0		
21 & above	3	5.0			0	0.0		
Total	**60**	**100.0**	**10.75**	**5.547**	**40**	**100.0**	**4.0**	**4.971**

Loan distribution for fish farmers

Table 2 shows the form of loan assessed from Nigerian Agricultural Cooperative and Rural Development Bank in Ogun state of Nigeria by sampled fish farmers' beneficiaries. It was discovered that loan disbursed to fish farmers was mainly in cash (100%). About 50% were granted loan between ₦100,000 and ₦150,000, while 35% and 16.7% received loan between ₦150,001 and ₦200,000 and ₦200,001 and ₦250,000 respectively. The bank interest rate charged on the collected capital was 8% while the insurance from Nigerian Agricultural Insurance Corporation (NAIC) was 3.75%. The loans was obtained between 2006 and 2008.

Table 2: Loan Beneficiaries from Nigeria Agricultural Cooperative and Rural Development Bank in Ogun State, Nigeria

	Freq	%	MEAN	SD
Form of loan				
Kind	0	0.0		
Cash	60	100		
Amount approved (₦)				
100,000-150,000	29	48.3		
150,001-200,000	21	35.0		
200,001-250,000	10	16.7		
Total	**60**	**100**	**178,333.3**	**45441.96**
Interest rate: 8%				
NAIC: 3.75%				
When loan was obtained				
2006	15	25.0		
2007	25	41.7		
2008	20	33.3		
Total	**60**	**100**		

Fishermen Cooperative Society

Fig 1 shows a bar chart representation of membership of cooperative fish farmers. Cooperative Society involves a social participation that helps farmers to pool their resources to have access to fisheries inputs and to have insights in their fishing issues. Membership of cooperatives is therefore a factor which influences the adoption of improved fisheries technologies and poverty alleviation. One hundred percent of the beneficiaries and 57.5% of non-beneficiaries were cooperators.

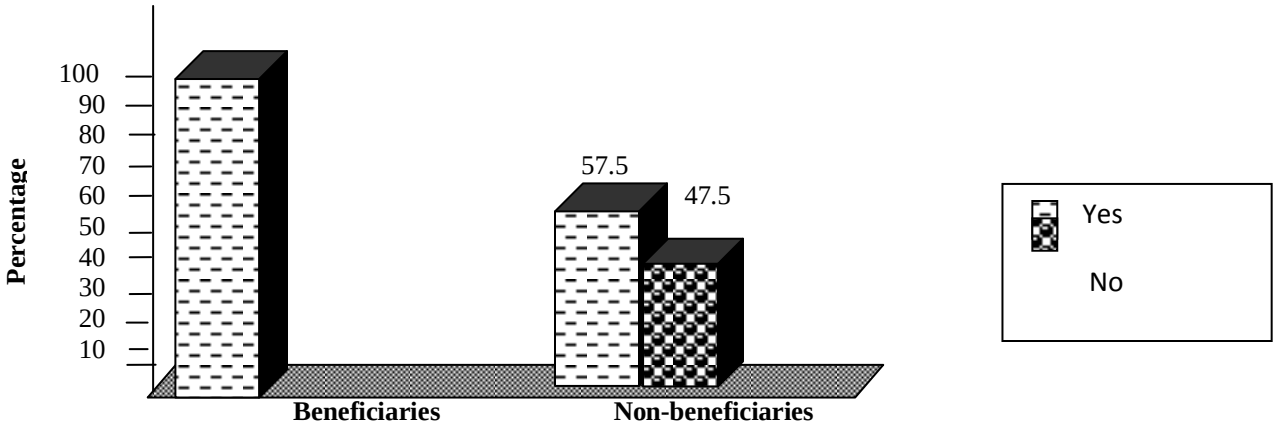

Fig 1: Bar chart representation of membership of cooperative of the fish farmers

Income realized from sales of fish

The average income earned by the beneficiaries and non-beneficiaries of Nigerian Agricultural Cooperative and Rural Development Bank loan was **₦3, 268,233** and **₦1, 974,750** respectively in Table 3. Different categories of income were earned by the respondents in the study area.

Constraints Militating against Fish Farming

From the study 98.3% and 95.0% of the beneficiaries and non-beneficiaries considered high cost of feeding as a major problem hindering fish farming while 0.0% and 17.5% said lack of appropriate land is their problem from Table 4.

Impact of Nigerian Agricultural Cooperative and Rural Development Bank loan on fish farming

From Table 5, a larger percentage of the beneficiaries said that the use of Nigerian Agricultural Co-operative and Rural Development Bank loan had a positive effect on aquaculture development.

Table 3: Distribution of the total income of the fish farmers

	Beneficiaries				Non-beneficiaries			
	Freq	**%**	**Mean**	**SD**	**Freq**	**%**	**Mean**	**SD**
Categories of total income (₦)								
≤499,999	0	0.0			1	2.5		
500,000- 999,999	1	1.7			2	5.0		
1,000,000-1,499,999	4	6.7			8	20.0		
1,500,000-1,999,999	5	8.3			12	30.0		
2,000,000-2,499,999	10	16.7			9	22.5		
2,500,000-2,999,999	6	10.0			2	5.0		
3,000,000-3,499,999	13	21.7			4	10.0		
3,500,000-3,999,999	5	8.3			1	2.5		
4,000,000 & above	16	26.7			1	2.5		
Total	**60**	**100**	**3268233**	**1503794**	**40**	**100**	**1974750**	**25203.9**

Table 4: Distribution of constraints militating against fish farming in Ogun State

	BENEFICIARIES				NON-BENEFICIARIES			
	Very serious	Serious	Not a problem	I don't know	Very serious	Serious	Not a problem	I don't know
Lack of appropriate land	0.0	0.0	100.0	0.0	0.0	17.5	82.5	0.0
Insufficient Labour	0.0	0.0	100.0	0.0	0.0	5.0	85.0	10.0
Poaching	0.0	5.0	95.0	0.0	0.0	52.5	47.5	0.0
Diseases& predators	0.0	76.7	23.0	0.0	15.0	62.5	22.5	0.0
Lack of Finance	66.7	33.3	0.0	0.0	0.0	70.0	30.0	0.0
High cost/ lack of construction equipment	0.0	33.3	66.7	0.0	0.0	17.5	82.5	0.0
Poor Marketing	0.0	45.0	55.0	0.0	12.5	52.5	35.0	0.0
Poor quality fish seed	10.0	40.0	50.0	0.0	15.0	40.0	45.0	0.0
Poor genetic broodstock fish	1.7	5.0	83.3	10.0	0.0	37.5	62.5	0.0
High cost of fish feed	98.3	1.7	0.0	0.0	95.0	5.0	0.0	0.0
Lack of technical know-how	5.0	38.3	56.7	0.0	0.0	62.5	37.5	0.0

Table 5: Percentage distribution of the impact of Nigerian Agricultural Co-operative and Rural Development Bank loan on fish farming

	Beneficiaries			
	Yes		No	
	Freq	%	Freq	%
Reduction of culture period	58	96.7	2	3.3
Increase in overall yield	60	100	0	0.0
Expansion of business	60	100	0	0.0
Increase revenue	60	100	0	0.0
Improvement in livelihood security	60	100	0	0.0
Improvement in usage of innovation	55	91.7	5	8.3
Generate employment	60	100	0	0.0
Reduce rural-urban migration	60	100	0	0.0
Enhance growth and development of rural areas	60	100	0	0.0
Poverty alleviation	60	100	0	0.0

DISCUSSION

The result assessed the impact of Nigeria Agricultural Cooperative and Rural Development Bank loan on fish farming which spread over the four agricultural extension zones (Abeokuta, Ijebu ode, Ikenne, Ilaro) of Ogun state.

Majority of all the 60 beneficiaries and 40 non-beneficiaries in the sampled areas were between the mean age 49 and 46 years respectively; an age in which they are considered highly productive and active to undertake strenuous task associated with farm work. This is in line with the assertion of Bello (2000) that age has positive correlation with acceptance of innovations and risk taking as implicit on the credit borrowing for agricultural production. Also, past studies revealed that older farmers often tend to be more conservative or traditional and were afraid of taking risk, which the adoption of new farm technology entails (Olomola, 1988).

The percentage of the male to female for beneficiaries and non beneficiaries were 76.7%, 70% and 23.3%, 30% respectively. This is a throwback to the traditional belief on women access to productive resources of which credit is one; this is however contrary to Lahia *et al*., (2000), which seem to suggest that women participate more than men in most farming activities. However, aquaculture practices were not limited to a particular gender. Both male and female farmers were engaged in fish farming to increase fish production; improved food security; reduce hunger and also their incomes. This implies that both sexes should be considered for aquaculture loans to expand the scope of their business.

Most (80% and 70%) of beneficiaries and non beneficiaries respectively were married. This implies that the beneficiaries will paid back the loan in time to maintain the family prestige. Education is an important factor which can influence farm productivity and determines farmer's access to loan and repayment, level of education according to the study showed that all the respondents had one form of education or the other. This is contrary to the general opinion that most farmers are illiterates or semi-illiterates; most of whom have dropped out of the formal school system as evidence from the studies of (Ozor, 1998 and Okwoche *et al*., 1998).

From the results, one can also inferred that Christianity was mostly practiced than any other religion as majority (63.3%, 60%) of the beneficiaries and non-beneficiaries fish farmers respectively were Christians. The average household size in the locality was found to be 5 persons for both beneficiaries and non-beneficiaries. The implication is that the relative small household size may increase the number of labour needed as against the findings of Adegbite and Oluwalana, (2004) and Adegbite *et al*., (2008); that the larger the household size, the more the likelihood of sustainable labour efficiency on farmer's farm give the constant labour.

The respondents' mean fish farming experience showed 11 years and 4 years for beneficiaries and non-beneficiaries respectively. Fish farming as the major occupation is a function of the importance attached to it as a source of livelihood 65% of the beneficiaries and 52.5% of the non-beneficiaries had fish farming as their major occupation and thus likely to commit more number of hours, efforts and loans towards the success of the farm enterprise.

Cooperative society involves a social participant that helps farmers to pool their resources, to have access to fisheries inputs and to have insights in their fishing issues. Membership of cooperatives is therefore a factor which influences the adoption of improve fisheries technologies and poverty alleviation. Hunderd percent of the beneficiaries were cooperative members while 47.5% of the non-beneficiaries were not in any cooperative society, this may be the reason for not benefiting from any source of loan. This was in line with the position of (Akinbile, 1998) that groups ensure that members derive benefits from the groups such that they will not have derived individually if they were acting alone.

The respondents earned their incomes from the sales of fish, fish products and farm produce. It was therefore pertinent that the respondents brought in more profit to alleviate poverty. Yearly estimated income showed that 26.7% of the beneficiaries and 1% of the non-beneficiaries earned well over ₦4 while 6.7% and 20% of the beneficiaries and non-beneficiaries were earning between ₦1M and ₦1.5M. This implies that beneficiaries of NACRDB had invested the loan on their business and followed the advised given by extension agents resulting in greater output as well as better sales. The generated greater revenue will give opportunity for quick pay back of the loan and interest, and increases chance of re-investment, sooner or later becomes an employer of labour as well as a role model.

Credit can be considered from its ability to energize or motive other factors of production. A major constraint faced by non-benefiting fish farmers (80%) was lack of access to credit from public sector-banks/institutions because of various administrate

hurdles and the need for collateral. Okwoche *et al.*, (1998) and Adebayo (2002) had established some relationship between access to credit and the adoption of farm practices in Nigeria. The results showed that majority of the respondents obtained credits worth ₦100,000 to ₦150,000 in the study area. The fish farmer's credit obtained had significant relationship on aquaculture development. The implication of this was that most of the farmers will use the obtained credit for the expansion of their fisheries enterprises. The rate of interest may determine the extents and duration of borrowing (Ijere, 1998). These findings revealed that the interest rate charged by Nigerian Agricultural Cooperative and Rural Development Bank is bearable (8%).

Well over 70% of the respondents had lack of sufficient fund, high inflation rate in the economy, high cost of investment, poor marketing channel and high cost of feeding as factors militating against the development of aquaculture industry in the study area.

CONCLUSION AND RECOMMENDATION

Based on the findings, the result showed that there is a significant difference between the profit level of the Nigerian Agricultural Cooperative and Rural Development Bank loan users and non-beneficiaries of the loan. This may be as a result of the loan collected and low interest rate (8%) charged by the bank. The loan received helps them in further expansion of their business which increases profitability. Therefore as a means of improving the production of fish in the study area, government should extend fund to the fish farmers with a subsidized interest rate.

From the study, the following are recommended:

- Government should increase the amount of loan that is allocated to the agricultural sector and invariantly the fisheries sector.
- Government should see to the granting of loan to fisheries sector and the monitoring of the loan to ensure that it is used for its purpose.
- Credit should be made available from other sources and even the non-governmental organization at a very low interest rate.
- Since aquaculture is the only visible source of meeting the protein requirement of the world, more credits/loans should be available as an encouragement to people in this field.
- Government should provide more infrastructural facilities that will reduce the cost of investing and provide a standardized law to regulate the price of fresh fish in the market.

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