

## **DETERMINANTS OF DEMAND FOR OGUN STATE AGRICULTURAL AND MULTIPURPOSE CREDIT AGENCY (OSAMCA) LOANS AMONG FISH FARMERS IN OGUN STATE, NIGERIA**

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### **ABSTRACT**

This study was conducted to examine the determinants of the demand for Ogun State Agricultural and Multipurpose Credit Agency (OSAMCA) loans amongst fish farmers in Ogun state, Nigeria in order to enhance sustenance of fish farming through the credit scheme. Data were collected, using multistage and simple random sampling methods. A total of 90 fish farmers from the four operational zones (Egba, Remo, Ijebu and Yewa) covered by the scheme were selected and interviewed using structural interview schedule and personal interview. Descriptive analysis was used to analyze the socio-economic characteristics, while budgetary analysis was used to determine the profitability, and multiple regression analysis was the inferential statistic used. The result revealed that the fish farmers mean age (41.2 years), male (78.9%), married (100%), average household size (7 persons), tertiary education (78.9%), Christianity (51.1%) and mean annual income after obtaining OSAMCA loan was (₦177,111.10) while it was ₦50,000 before the loan was obtained. Average fish farming experience was 6 years, farming mainly for profit and augmentation of income from other sources, land acquisition mainly from purchase (60%). Average pond/tank number (5), farm size less than 1 hectare (100%) cosmopolitan (mean 2km), average fish output (92.7778kg), membership of cooperative (77.8%) and profit generated was ₦121,141 after the loan. Source of information were mainly from extension agent, OSAMCA agent and GSM telephone (85.6%). The budgetary analysis showed that the average total cost of production per annum was ₦418,088.34 while the total income was ₦539,200.00; which gives a net farm income of ₦121,141.66 per annum. The profitability ratio gives a benefit cost ratio of 1.29, rate of return of 0.29, expense structure ratio of 0.11, and a gross ratio of 0.78, which shows that acquired loan for fish farming, is profitable and viable in the study area. Constraint to procurement of OSAMCA loans include short period of repayment (66.7%), inadequacy of credit (36.7%), provision of collaterals (61.1%), sourcing of civil servants of guarantors (22.2%) and administrative bottle neck. Educational level and fish farming experience had significant relationship between socio-economic profiles and loan demand. Based on the findings of the study, it is recommended that lump sum of money with

little interest rate should be granted to the fish farmers to enhance their productivity and expand their business in order to reduce poverty.

**Key words:** Determinants, Demand, OSAMCA, Fish Farmers, Nigeria

## INTRODUCTION

Aquaculture is one of the ways of producing food rich in protein that is now in short supply especially in Nigeria (Adekoya, 1994). The importance of fish for food and development in Nigeria cannot be overemphasized given its enormous potential in terms of food and nutrition, security, employment and income generation, poverty alleviation, and foreign exchange earnings (Omitoyin, 2007).

The total fish demand in Nigeria is about 1.5million metric tons while the domestic fish production has only increased to about 0.7million metric tons recently. The implication of this is that there is still demand-supply gap which has to be filled by importation of more than 0.6million metric tons valued at about ₦50 billion annually (Dada, 2007). Only 2% of these 0.7million metric tons are produced locally from aquaculture, the remaining 98% is from capture fisheries which are dominated by Artisanal fisheries (Aliu and Abolagba, 1998).

In spite of the potential of aquaculture, there are lots of problems militating against its development. Prominent among these are poor quality fish seed and feed, poor infrastructure, inadequate technical know- how and credit.

Credit which is of great importance to the sustenance of fish farming and agricultural development in Nigeria is however lacking in the scheme of things (Onwuka, 2006). Even when available, access to credit is difficult for farmers in the rural areas despite the fact that it is an essential input in aquaculture production (Olaoye, 2010). This could be adduced to lack of information and collateral securities among farmers.

However, in recent time farmers' participation in micro-credit programme seem to have solution in reducing poverty and financial constraint, and has grown substantially to make credit more available in form of small loans without collaterals through the Nigerian Agriculture Credit and Rural Development Bank (NACRDB) and the Agricultural Credit Guarantee Scheme (ACGS) (Adegbite, 2002).

In Ogun State, Nigeria, a programme from the government on how to tackle poverty, unemployment, food insecurity, and general insecurity of lives was initiated that anchored on timely and adequate credit support to small and medium scale farmers known as Ogun State Agricultural and Multipurpose Credit Agency (OSAMCA). According to Adegbite *et al.*, 2008, an Agricultural credit policy in Ogun State through this scheme was tailored towards efficiency in agricultural production using policy instrument of:

1. Revitalization of the institutional credit source through the establishment of the Ogun State Agricultural and Multipurpose Credit Agency (OSAMCA).
2. Using relatively low rate of interest compared to high rates charged by the commercial banks.

3. Giving allowances for less rigid conditions for borrowing decentralizing the agency through the establishment of zonal offices in addition to the State headquarters to bring the services nearer to intending beneficiaries
4. Creating innovations in credit delivery operations involving compulsory savings by potential beneficiaries or their group.
5. Providing reliable and sustainable source and supply of take-off grant and funds for the credit delivery. Consequently it is necessary to assess the determinants of the demand for OSAMCA loan in Ogun state, Nigeria in meeting the credit needs of small and medium-scale fish farmers, describe the socio-economic characteristics of fish farmers, examine the existing patterns of supply of loans to fish farmers in the study area, determine the profit level of users of OSAMCA loans amongst fish farmers and identify the factors that influence the demand for Credit (OSAMCA LOANS) among fish farmers in Ogun state.

### **JUSTIFICATION OF STUDY**

In order to produce, fish farmers need to spend more on improved inputs which must be financed either through savings, borrowing or subsidizing to foster agricultural growth. One of the striking features of the agrarian structure is the fact that the majority of the farmers are poor with little or no tangible assets to offer as security against the loans they require for raising their productivities in the farm. In order to solve these problems, the agricultural production by providing credit where there is a high level of risk or cost that is acceptable by commercial lenders either to farmers or in respect to loans with insufficient security generally.

This justification for government support in the supply of credit to farmers raises at least two issues. First, because it seems unlikely that private sector lenders would forgo profitable lending opportunities, both the rationale for this discrimination against farm borrowers and evidence that it existed. Second even if there were some discrimination against farmers as borrowers. The fungibility of credit suggests that at least some publicly supplied credit targeted for agriculture would be diverted thus reducing its effect on agricultural output (Belongia and Gilbert, 1990).

### **MATERIALS AND METHODS**

**The study area:** The study was conducted in four operational zones covered by OSAMCA in Ogun state. There are Egba, Yewa, Ijebu and Remo zones (Figure 1). Ogun state is located in the south-western part of Nigeria. It is bounded in the west by Republic of Benin and in the south by Lagos state, in the North both by Oyo and Osun states and in the East by Ondo state (Ogun state of Nigeria, 1998). It lies within latitudes 6°N and 8°N and longitude 2.5°E and 5°E. The state is approximately 19 percent, that is, 17,542 square kilometers of Nigeria's 923,219 square kilometers Land area with population of 3.3 million (Nation). Ogun state is a heterogeneous state, inhabited predominantly by the Egba, Yewa, Ijebu, Remo, Awori and Egun who belong to the Yoruba ethnic group, the largest ethnic group in west African coast and one of the largest and longest established ethnic groups on the Africa continent (Olaoye *et al.*, 2007).

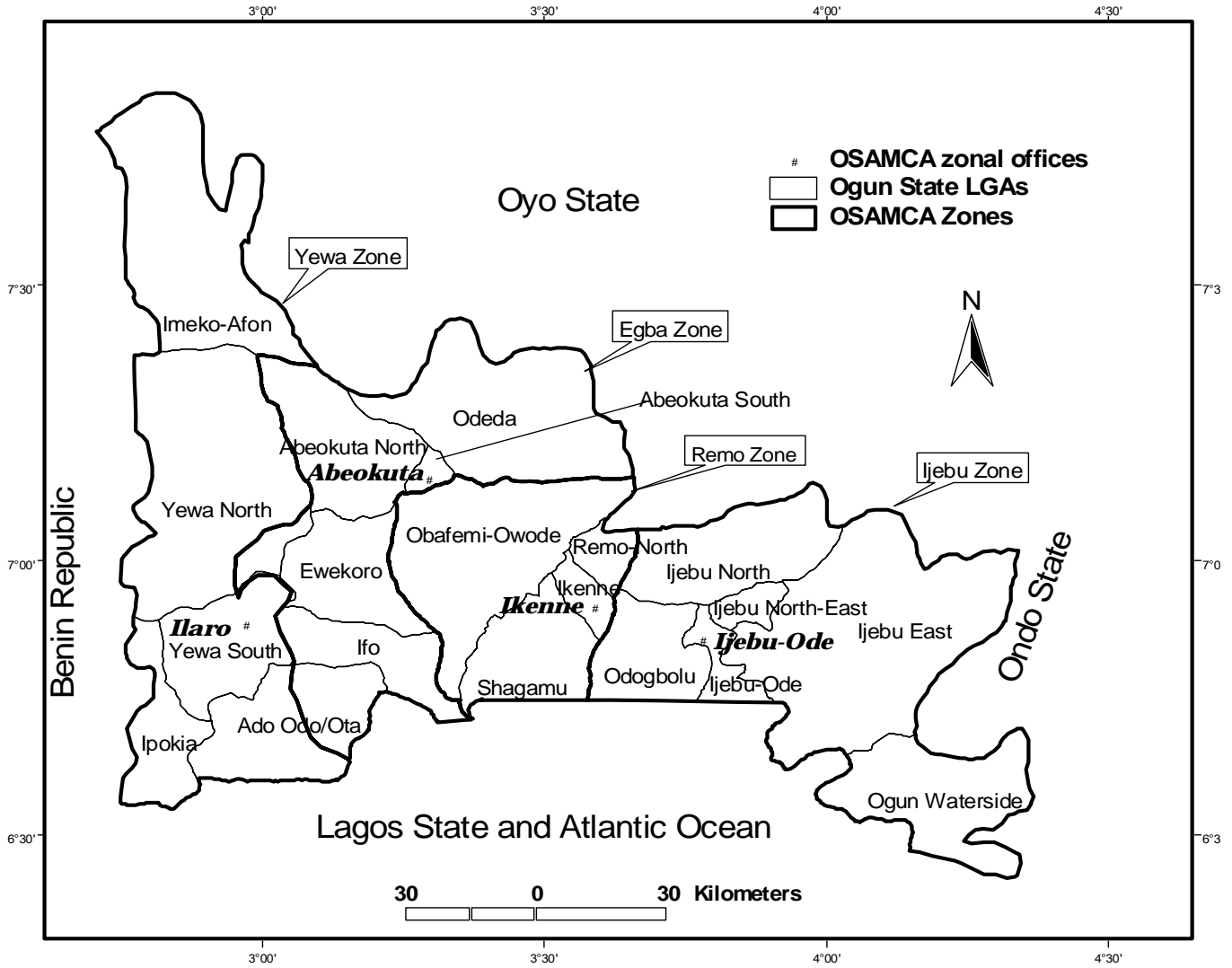


Figure 1: Map of Ogun state showing OSAMCA zones and study locations

Source: Adegbite *et al.*, 2008

**Data collection and sampling procedures:** Multi-stage and simple random sampling (SRS) technique was used to select the fish farmers. There are 20 Local Government Areas (4 OSAMCA zones) in Ogun State. At the first stage, two (2) Local Government Areas (LGAs) per OSAMCA Zone were purposively selected namely: Remo zone (Shagamu and Ikenne); Ijebu zone (Ijebu North and Ijebu-Ode); Ilaro zone (Yewa south and North) and Egba zone (Obafemi-Owode and Abeokuta North). Two fish farming communities were randomly chosen from each of the 2 LGAs. From each of the selected communities, twelve fish farmers were randomly picked. A total of ninety-six (96) respondents were randomly chosen from twenty LGAs (4 OSAMCA zones) and administered interview schedules. Six (6) out of the returned 96 interviewed guides were discarded due to inconsistencies and irregularities in the result. Ninety-six copies of well structured research schedules were validated and pre-tested at two weeks intervals for reliability test.

**Data analysis:** Data collected were analyzed with the use of descriptive and inferential statistics like budgetary technique and profitability ratios. Frequencies count and percentages, tables, mean and standard deviation were used to describe the data collected on the socio-economic characteristics of the respondents. Descriptive analysis were used to highlight the nature and frequency of information sources, problems encountered by Fish Farmers in fish farming and constraint to procurement of OSAMCA loan.

The budgetary technique (economic indicator) was used to determine the profitability of the aquaculture enterprise. It was done by estimating the total variable and fixed cost as well as total income to determine the net profit of an average small scale fish farmer that benefited from OSAMCA loan. Also multiple regression analysis was used to analyze and explain the relationship between the dependent (loan demand) and the independent variables from where the major demands for OSAMCA loan determinants were obtained. The various functional forms fitted include linear, semi-log, Cobb-Douglas and exponential functions.

Implicitly, the functions are:

$$Y = f(X_1, X_2, X_3, X_4, X_5, \dots, X_n)$$

Where:

Y = OSAMCA loan Demand

X<sub>1</sub> = educational level

X<sub>2</sub> = business experience

X<sub>3</sub> = short period of repayment

X<sub>4</sub> = inadequacy of credit

X<sub>5</sub> = provision of collateral

X<sub>6</sub> = sourcing of civil servant as guarantors

X<sub>7</sub> = administrative bottleness, etc

## RESULTS AND DISCUSSION

### Socio-economic characteristics of OSAMCA fish farmer loan beneficiaries

Entries in Table 2 showed that 50% of the fish farmers were within the age group of less than 41, (38%) within the age group of 41-45 and 11% within the age range of 46 and above. According to the study it can be shown that the entire fish farmers involved in fish farming fell between the age range of less than 41years and a little above, indicating that the majority of the respondents were within economically active age distribution (FAO, 1997).

The gender distribution of the fish farmers were males (78/9%) while 21.1% were females. This revealed that males were involved in fish farming due to the great task and energy required, which women may find hard to cope (Olaoye, 2010). Olaleye (2002) reported that females in this part of the country were usually involved as helpers or as supplier of labour “Light” farm operations such as weeding, harvesting, processing and marketing. Most (100%) of the fish farmers were married leading to the provision of family labour which plays an essential role in feeding, sorting and digging of ponds. Household size is an important variable of fish farm enterprise and an indication of degree of rurality. Fifty percent of the fish farmers’ household sizes were between 6 and 10.

In terms of education, 78.9% of the respondents had tertiary education while 21.1% had secondary education. Majority of the fish farmers had tertiary education indicating that fish farming requires high technical know-how and skills. Also, previous studies have shown that education is a key factor in shaping perception of farmers (Adebayo and Adeyemi, 2000).

Many (51%) of the respondents were Christian while 48.9% where Islam. From the result of the study, many (50%) of the respondents had between (1-5years), while 41% had 6-10years, and 8.9% and above years of experience, this implies that fish farmers in the study area does not have much experience in fish farming, aquaculture may just be growing in the study area. This observation agreed with the work of Aromolaran (2000) in which he said that fish farmers in Abeokuta zone have less than 11 years experience in fish farming on a small scale level.

Most (90.6%) of the fish farmers had less than 1ha farm size, this implies that fish farming require high financial capital to establish, thus finance is a major constraint in pond construction and 82.2% had 1-5 pond number as well as pond number of above 5 (17.8%). Majority of the farmers involved in fish farming have other profession apart from integrated fish farming while people are really full-time and show more concentration or have enough time for the profession.

Quantities of fish harvested between 500 and 1000kg were 58.8%, while 42% were above 1000kg. Many (40%) of the respondents had annual income in the range of ₦101,000-₦200,000, less than ₦101,000 (38.9%) and (11%) had ₦200,000-₦300,000, 25.6% of the respondents were members of fadama group, 22.2% AFAN, 22.2% dynamic farmers group, 8.9% Agbeloba farmer cooperative society while 21.1% no response. This implies that the fish farmers were living below the poverty line, (that is living on less than 1dollar per day) the implication was that, the fish farmers need more micro-credit for expansion of fishery enterprise.

The Table 2 below shows the proportion (%) of fish farmers' income saved using a ten finger concept. Most (90%) of the fish farmers that obtained the loan used it for fishery business expansion. Sixty percent of the fish farmers acquired their land through purchased, 28.9% were inherited and 11.1% was lease or rented. This implies that majority of the fish farmers bought their land with personal savings and inherited.

Most (100%) of fish farmers went into fish farming for profit or to argument income from other sources, 68.9% on commercial bases while 31.1% were into fish farming on subsistence bases. From the study, it can be revealing that most of the fish farmers source their finance from OSAMCA Agency. Some of the fish farmers were members of cooperative society in other to derive one benefit or the other either by borrowing money or any other achievements.

The distance of many (42.2%) farmers from OSAMCA office to fish farm site (km) was between 1 and 5km, 20.0% was between 6 and 10km and 37.8% were above 10km while distance of fish farm to residential area (80%) between 1-5km, 20% above 10km. This implies that for any fish farming enterprise to be successful the distance from the farmer's farm to the extension service must not be too far for easy implementation and not ware out.

**Table 1: Percentages distribution of fish farmers' OSAMCA loan beneficiaries according to socio economic characteristics**

VARIABLES	FREQUENCY	PERCENTAGE	MEAN	STD. DEV
<b>Age</b>				
Less than 41	45	50.0	41.20	4.21
41-45	35	38.9		
46 and above	10	11.1		
<b>Sex</b>				
Male	71	78.9		
Female	19	21.1		
<b>Marital status</b>				
Married	90	100		
<b>Household size</b>				
1-5 people	34	37.8	7.09	2.95
6-10 people	47	52.2		
11 and above	9	10.0		
<b>Level of education</b>				
Secondary education	19	21.1	4.7889	0.4104
Tertiary education	71	78.9		
<b>Religion</b>				
Christianity	46	51.1		
Islam	44	48.9		
<b>Annual income from fisheries</b>				
Less than 100001				
101,000-200,000	35	38.9	177111.1	89.420
	36	40.0		
	10	11.1		
	9	10.0		
<b>Fish farming experience</b>				
1-5 years	45	50.0		
6-10 years	37	41.1	5.8667	2.5003
11 and above	8	8.9		

<b>Why fish farming</b>				
For profit	45	50.0		
For profit/argument income from other sources	45	50.0		
<b>Mode of land acquisition</b>				
Inherited	26	28.9		
Purchased	54	60.0		
Lease/ rented	10	11.1		
<b>Level of production</b>				
Subsistence	28	31.1		
Commercial	62	68.9		
<b>Pond/ tank number</b>				
1-5	74	82.2	4.7333	1.4206
above 5	16	17.8		
<b>Farm size</b>				
Less than 1ha	90	100.0		
<b>Distance of OSAMCA to fish farm site</b>				
1-5km	38	42.2		
6-10km	18	20.0	1.9556	0.8045
above 10m	34	37.8		
<b>Quantity of fish harvested 100kg per production</b>				
500-1000kg	52	57.8	962.7778	453.9084
above 1000kg	38	42.2		
<b>Membership of cooperative society</b>				
Membership	70	77.8		
Non-membership	20	22.2		
<b>Membership</b>				
Dynamic farmer group	19	21.1	1.8000	0.5028
Agbeloba farmers cooperative society	8	8.9		
Fadama group	23	25.6		
AFAN	20	22.2		
No response	20	22.2		
<b>Using a ten finger score pt proportion of income saved</b>				
20.00	38	38.9		
30.00	27	30.0		
40.00	20	22.2		
80.00	8	8.7		
<b>Distance of fish farm to residential area</b>				
1-5km	72	80.0	1.4000	0.8045
above 10km	18	20.0		

#### The nature and frequency of information sources of OSAMCA loan

Most (86%) of the fish farmers always use extension and OSAMCA Agent as source of information. Telephone GSM (85.6%) used always, occasionally used radio broadcast, most (100%) occasionally use Television broadcast. (57.8%) occasionally use newspaper, friends and relation (56.7%) uses village crier as information source.

**Table 2: Percentage distribution of the fish farmers according to the nature and frequency of information sources**



VARIABLES	ALWAYS USE		OCCASIONALLY USE		DON'T USE	
	Freq	%	Freq	%	Freq	%
Extension	77	85.6	13	14.4	0	0.0
Radio broadcast	13	14.4	77	85.6	0	0.0
Television broadcast	0	0.0	90	100	0	0.0
News paper	13	14.4	52	57.8	25	27.8
Friends & relations	26	28.9	52	57.8	12	13.3
Village criers	13	14.4	51	56.7	26	28
OSAMCA Agents	77	85.6	0	0.0	13	14.4
Telephone (GSM)	77	85.6	13	14.4	0	0.0
Extension Guide/ Bulletin	12	13.3	65	72.2	13	14.4
<b>Total</b>	<b>90</b>	<b>100</b>	<b>90</b>	<b>100</b>	<b>90</b>	<b>100</b>

#### **Problems encountered by Fish Farmers in fish farming**

Most of the fish farmers complained that distance of the extension staff office to the farm, poaching of cultured fish, disease and predator, high inflation rate in the economy, lack of finance, high cost or lack of construction equipment, marketing of fish and fish products, poor quality fish source, poor genetic brood stock fish, high cost of fish feed, testing of water quality parameter kits and technical skills and knowledge are very serious problems. However insufficient labour is not a problem.

**Table 3: Percentage distribution of fish farmers according to encountered problems in fish farming**

<b>Factors</b>	<b>Very serious</b>	<b>Serious</b>	<b>Not a problem</b>	<b>Don't know</b>
	<b>%</b>	<b>%</b>	<b>%</b>	<b>%</b>
Lack of appropriate land	10	22.2	0.0	67.8
Insufficient labour	40	22.2	37.8	0.0
Distance of the extension staff's office to the village/ farm	10	22.2	67.8	0.0
Poaching of cultured fish	10	64.4	25.6	0.0
Diseases and predators	35.6	38.9	25.6	0.0
High inflation rate in the economy	40	46.7	13.3	0.0
Lack of finance (capital and credit)	40	46.7	13.3	0.0
High cost/ lack of construction equipment	35.6	51.1	13.3	0.0
Marketing of fish and fish products	35.6	38.9	25.6	0.0
Poor quality fish seeds sourced	27.8	34.4	37.8	0.0
Poor genetic brood stock fish	14.4	47.8	37.8	0.0
High cost of fish feed	10	52.2	37.8	0.0
Testing of water quality parameters	10	52.2	37.8	0.0
Technical skill and knowledge	10	52.2	37.8	0.0

**Constraint to procurement of OSAMCA loan**

The Table 4 shows that high interest rate, inadequate of credit, lack of approval and timely release of credit, distance of agency and beneficiary, administrative bottleneck and sourcing of guarantors from government institution or agencies are serious problems to the fish farmers, while repayment time or period and provision of collaterals is said and be a very serious problems to the fish farmers. Amount of loan obtained is not a problem to the fish farmers.

**Table 4: Percentage distribution of fish farmers according to constraints to procurement of OSAMCA Loan**

<b>Constraint</b>	<b>Very serious (%)</b>	<b>Serious (%)</b>	<b>Not a problem (%)</b>
High interest rate	5.6	11.7	5.6
Inadequacy of credit	36.7	46.7	11
Repayment time/ period	66.7	11.1	11.1
Amount of loan obtained	27.8	30.0	36.7
Late approval and release of credit	0.0	40.0	60.0
Distance of agency and beneficence	17.8	60.0	11.1
Administrative bottleneck	14.4	56.7	23.3
Sourcing of guarantors from government institution/ agencies	22.2	55.6	0.00
Provision of collaterals others specify	61.1	16.7	22.2

**Costs and Return Structure (budgetary analysis)**

The cost and returns structure show the contribution of the individual cost items to the total cost items to the total cost of production, it also show the profitability of the average fish farmer in the study area. The arrangement of the structure of the fish farm had for the study as shown in the Table 5 below:

**Table 5: Costs and returns structure of the average Fish Farmer enterprise / week**

<b>Items</b>	<b>Amount (₦)</b>	<b>Percentage of total cost</b>
Revenue	539,200	
<b>Variable cost</b>		
Fish seed	300,000	71.76
Liming	5,120	1.21
Labour	9,333.33	2.22
Transportation	23,666.67	5.66
Pond preparation	26,250	6.3
Fertilizer	9,000	0.21
Others	5,000	1.2
<b>Total Variable Cost (TVC)</b>	<b>370,270</b>	<b>88.56</b>
<b>Fixed cost</b>		
Land purchase/ rent	5,000	1.2
Water pump	4,000	0.96
Earthen pond	6,000	1.44
Plumbing	16,666.67	3.99
Deep well	4,000	0.96
Water container	2,800	0.67
Drag net	750	0.18
Cutlasses and file	280	0.07
Weighing scale	625	0.18
Generator	26,666.67	0.64
<b>Total Fixed Cost (TFC)</b>	<b>47,788.34</b>	<b>11.64</b>
<b>Total Cost</b>	<b>418,088.34</b>	<b>100</b>
Gross Margin = REV-TVC	168,930	
Profit = REV-TC	121,141.66	

**Multiple Regression Analysis between loan demand and socio-economics characteristics of the Fish Farmers**

The multiple regression analysis was used to show the casual relationship between dependent and independent variables. The dependent variable for the study is the total revenue (Y) in Naira while the independent variables were identified to represent the factors that were presumed to have significant effect on the dependent variable. Three functional forms were fielded in estimating the production model; these include the linear, semi-log and double-log functions. The results are represented in Table 6.

A lead equation from the three functional forms was chosen based on statistical and economic criteria. The linear function was chosen because it has parameters, which were significant at 5% probability level (i.e.  $R^2 = 69.1\%$ )

Where Y = Loan demanded (₦)  
X<sub>1</sub> = Age  
X<sub>2</sub> = Sex  
X<sub>3</sub> = Educational level  
X<sub>4</sub> = Fish farming experience  
X<sub>5</sub> = stock size  
X<sub>6</sub> = Do you belong to any cooperative society/ fish farmer association  
X<sub>7</sub> = Interest rate

**Table 6: Multiple Regression Analysis between loan demand and socio-economics characteristics of the Fish Farmers**

Model	Constant	X <sub>1</sub>	X <sub>2</sub>	X <sub>3</sub>	X <sub>4</sub>	X <sub>5</sub>	X <sub>6</sub>	X <sub>7</sub>	R <sup>2</sup>	dR <sup>2</sup>	F.stat
Linear form (t-value)	2309092** (6.205)	0.158 (1.830)	-0.55 (-0.376)	-0.210** (-2.456)	0.845** (8.369)	-1.156 (-1.362)	-0.15 (-0.12)	0.044 (0.630)	0.691	0.664	21.099
Semi – log Reg (t-value)	27.249 (6.741)	-0.093 (-0.835)	0.115 (0.612)	-0.239** (-2.161)	0.567** (4.337)	-0.500** (-3.378)	0.122 (0.757)	0.068 (0.746)	0.688	0.655	8.733
Double log (t-value)	1295890** (9.041)	-0.167 (-2.140)	0.130** (1.674)	0.866 (9.470)	0.138** (1.463)	-0.277 (-2.989)	0.086 (0.720)	--0.026 (-0.410)	0.477	0.422	26.147

Source: Field Survey, 2008

\*\* = Variables significant 5 percent probability level

R<sup>2</sup> = Coefficient of multiple determination

Adjusted R square

## CONCLUSION AND RECOMMENDATION

The conclusions to be drawn from this study were as follows:

1. Majority of the fish farmer interviewed had adopted the use of earthen or dug out pond, feeding fish with pellets and harvesting technique such drag net pumping pond and dragging, fish sorting technique.
2. Most fish farmers that are involved in culture of *Clarias gariepinus* had a high level of education.
3. Majority of the fish farmers do not belong to co-operative society, except for few of them.
4. Majority of the fish farmers are civil servants and take fish farming as a subsidiary occupation.
5. The majority constraint identified is lack of capital, poor extension services and poor accessibility of road.

Emphasis on agricultural credit administration has remained the major policy of the Ogun State Agriculture and Multipurpose Credit Agency (OSAMCA) lending policies and procedures through the zonal offices with three years of operation, the Agency was able to operate in the area of Agricultural financing and micro-agricultural enterprises development.

Based on the conclusions of this study the following recommendations are made to enhance fish farmers' perception, adoption of fisheries technologies and expansion of aquaculture enterprise.

To boost the morale of the fish farmers the following must be done.

1. Government should make soft loans available and affordable to the fish farmers with low interest rate.
2. In its effort to reach the small-scale farmers in the state and maximize, marginal impact of the services rendered, there is a need for the agency to give room for inter and intra-service placement in the zonal offices
3. Innovative strategies that could reduce transaction cost of both the lender and borrowers and increase marginal returns on loans need adopted and encouraged.
4. iv. Adequate infrastructure such as essential credit, good road net work, rural
5. electrification, bore hole water, which will enhance the adoption of innovation.
6. Fish farmers themselves need to form themselves into co-operative societies to
- a. make them have accessibility for the procurement of loan.
7. Research work should be carried out on the problems militating fish production in Nigeria.
8. The staff strength of the OSAMCA agent should be increased, and the agent provided with transportation, facilities and other benefit that will motivate them in performing their duties.
9. The provision of training support programme in areas of fisheries technology.

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