



Effects of Cooperative Loan on Small Scale Fish Farming Business in Oyo State, Nigeria

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Abstract. Fish is acclaimed to be the principal source of animal protein for over one billion people globally and provides many important nutritional and health benefits. Fish farming is a profitable venture and it is rapidly expanding and it will continue to be profitable if the planning and management are well taken care of. In consideration of the impact of cooperative society in agricultural production in developed economics, farmers in the developing countries had been encouraged to organize themselves into cooperative societies. Observations however, indicated that a good number of them, still do not participate in cooperative societies and the level of livestock production continues to decline. This study looked at the effect of cooperative loan on small scale fish farming in Egbeda Local Government Area of Oyo State. 120 fish farmers were selected for the study through Two-Stage sampling techniques, structured questionnaires were used to obtain data from the fish farmers. Data were analysed using descriptive statistics, budgetary analysis and regression analysis. The result revealed that 73.3% were male and 40% of the fish farmers in the study area were in their active and productive age. Majority (62.5%) of the fish farmers cultured catfish; also 62.5% operate on 1-2 plots of land with mostly earthly ponds for rearing their fishes. Moreover, 69.2% were cooperative members, 55.8% had cooperatives as their major source of funds. Budgetary analysis showed that fish farming is a profitable business with Gross Margin of ₦ 953,466.25,

Net Income of ₦ 708,675 and Profitability Index of 0.585. The significant factors determining profitability were age of farmers, level of education, number of workers, business net income, access to cooperative and interest rate (although it had a negative effect). It can then be concluded that membership of cooperative, access to cooperative fund brings about profitability and growth of fish farming business. Therefore, farmers should be sensitized on the existence benefit to be derived from cooperatives.

Keywords: Fish, Profit, Pond, Data, Production

1. Introduction

In Nigeria, Agriculture provides between 80 to 90 percent of the country's food needs (Odife, 2002). It however has diverse aspects and this includes fish farming which involves the rearing of fish for the purpose of consumption or sale. Fish is acclaimed to be the principal source of animal protein for over one billion people globally and provides many important nutritional and health benefits. Fish has the highest level of easily metabolisable proteins; it is reputed for its high quality proteins, fats, vitamins, calcium, iron and essential amino acids. The per caput consumption of animal protein in the country has been put at 5gm per day. This is a far cry from the FAO's recommended level of 35gm per day (Afolami and Oladimeji, 2003).

Millions of people including many in developing countries derive their livelihoods from fishing while about 2.6 billion people get their protein from seafood. Fishing provides employment for up to ten million people in Africa and provides a vital source of protein to 200 million people. About 30% (29.5 Mt) of the world fish catch is used for non-human consumption, including the production of fishmeal and fish oils that are employed in agriculture, in aquaculture, and for industrial purposes. Fishmeal and fish oils are key diet components for aquaculture production; depending on the species being cultured, they may constitute more than 50% of the feed (Adebo and Ayelari, 2011). Presently, fish as an important component of the population's diet in many parts of the world has increased rapidly over the past hundred years due to improved technology, which showcases powerful engines and solar equipment and led to over fishing, causing a worldwide decrease in wild stocks accounting for the decline in the fish population dynamics. The need to increase fish production by farming became an urgent matter.

Cooperatives all over the world are instruments of social and economic transformation (Ijere, 1992). The relevant social aspects of people from Africa, according to Ijere (1992), are those aspects that deal with their attitudes of life and themselves, their modes of behaviour and relationship with one another as well as their modes and customs. These issues should be typified by such norms as honesty, fairness, equity, democracy and mutual fellow feelings that he further postulated. It can be said that neither socialism nor capitalism nor a mixed economy enshrines or espouses the above standards or virtues as does cooperative, whether traditional or modern. The major characteristics of traditional types of cooperative, such as Ajo, Isusu or Esusu contribution clubs, age groups and work relation arrangements are founded on the above principles. These bodies are very careful about who is admitted into their membership. They admit only those people who are known to for their integrity and honesty, good reputation, and kindness. The modern cooperative only came to borrow and grow from these traditional trails of Nigeria society. People come together not only for fellow feeling, but

also to help themselves. That is to say those individuals form groups or cooperatives immediately their individuals efforts are geared towards economic problems to be solved and are those of scarcity, matching wants with available resources and seeking ways to argument any shortfall or optimizing the given situation by different types of combinations (Ijere, 1981).

The resources mentioned above can be physical, mental, and material in nature. They form the basis for producing the commodities needed by man. Cooperatives as economic bodies operate in similar manner to other business. They are therefore, expected to justify their existence through acceptable results or benefits to the members of the society. Agricultural inputs are put into food production (Dalton, 1982) to make them available at the consumers' table. By this statement, all farmers-arable, tree/forest products, fish and livestock are involved in agricultural cooperatives. The economic problems of members, which the cooperatives are meant to solve, extend from production to marketing, thrift, processing, packaging, and storage (Osuntogun, 1990). Ubani (1980) in a study demonstrated that the NUS farmers Multipurpose Cooperative Society have shown that a cooperative society can be set up and managed as a modern business, and still fulfill its social functions to its members. The society which has fine functioning advantages as the supply of essential commodities at subsidized rates and credit disbursement to the members have substantially improved the members' well-being (Ubani, 1980). The membership of cooperative society increased to approximately 3,000,000 in 1988 compared to 400 in 1935, this is an indication of the benefits members derive from them.

In consideration of the impact of cooperative society in agricultural production in developed economics, farmers in developing countries had been encouraged to organize themselves into cooperative societies. Observations however, indicated that a good number of them, still do not participate in cooperative societies and the level of livestock production continues to decline as evidenced from the present high cost of meat, which leads to inadequate intake

(Oladeji and Oyesola, 2000). They further argued that the inadequacy of animal protein in human-kind diet had been responsible for incidence of malnutrition in infants and adults. Thus the need arose to explore alternative sources of animal protein supply as a means of increasing available food output.

Fish farming is a profitable venture and it is rapidly expanding and it will continue to be profitable if the planning and management are well taken care of. Fish farming started in Nigeria over 40 years ago. The Nigerian government has recognized the importance of the fishery sub-sector and it has made several attempts over the years to increase their productivity through institutional reforms and the various economic measures. Some of these measures provided subsidy for inputs and exemption from tax for fishermen. Despite these efforts of government, there is still a deficit in the supply and demand for fish by the population (Otto and Wilfred, 2011). Most of the fish farming in Nigeria is carried out by small scale operators in small fresh water ponds (UNDP). Nigeria has a population of over one hundred million people and has her national fish demand at over 1.5 million metric tonnes. The current annual aquaculture production hovers around 500,000 metric tonnes. These combined with ever decreasing catch (due to over exploitation) from the capture fisheries have not been able to meet the ever-increasing protein demand of the country. Thus the challenge to increase protein consumption in Nigeria appears to be more urgent now than ever (Mbanasor, 2002).

Poor people are facing new barriers in both their production and returns on fish. Even by the standards of developing countries, artisanal fishers and fish workers are often among the poorest people and they generally operate on a small scale and use traditional fishing practices yet new technologies and environment requirement favour large scale capital intensive operation at the expense of traditional and small scale commercial fishing (Delgado et al, 2008). Whereas small scale fish farming supplies the greatest percentage of the Nigerian's annual fish production output (FDF, 1995). The following

problems are found to be facing the potential small scale business owners in obtaining finance: high cost of capital, inability to raise equity finance, unusual collateral.

2. Objectives of the Study

The broad objective of this study is to know the effect of Cooperative loan on Small Scale Fish Farming Business in the Egbeda Local Government Area of Oyo State, Nigeria.

The specific objectives are to:

- describe the socio economic characteristics of small scale fish farmers in the study area.
- identify the various sources of funds available to small scale fish farmers..
- determine the profitability of small scale fish farming, and
- examine the determinants of the growth of small scale fish farming in the study area.

3. Research Methodology

3.1 Study Area

This work was carried out in Egbeda Local Government Area, one of the 33 Local Government Areas in Oyo State. It is situated in Ibadan (the capital of Oyo State). Its headquarters is in the town of Egbeda. It has an area of 191 km² and a population of 281,573 at the 2006 census. This area was selected for study due to easy accessibility to relevant institutions needed for this research work.

3.1 Sources and Methods of Data Collection

Both primary and secondary data were used for this study. The primary data were collected through a well structured questionnaire and personal interview, where necessary, to gather necessary and relevant information from fish farmers. Secondary data were sourced from relevant journals, publications, statistical bulletin, reports and the internet.

3.2 Sampling Size and Techniques

Two stage sampling technique was used for this study. The first stage involved a selection of six (6) communities from the existing communities in the study area. The second stage involved a random selection of twenty (20) fish farmers from each community selected at the first stage. This gave a total number of one hundred and twenty (120) fish farmers for the study.

3.3 Methods of Data Analysis

Both descriptive and inferential statistics were used to analyse the data collected. Descriptive statistics such as frequency table, mean and percentages were used to describe the socio-economic characteristics of small scale farmers, and to identify various sources of fund available to the fish farmers, while inferential statistics such as budgetary analysis and ordinary least square models were used to determine the profitability level and to examine the determinants of growth of small scale fish farming.

3.4 Profitability level of small scale fish farming

This objective was achieved using budgetary analysis. The cost and return of the small scale fish farming was determined with the following budgetary analysis:

$$TC = TVC + TFC$$

$$TR = P \times Q$$

$$\text{Gross Margin (GM)} = TR - TVC$$

$$\text{Net Income (NI)} = GM - TFC$$

$$(TR - TVC) - TFC$$

$$TR - (TVC + TFC)$$

$$TR - TC$$

$$\text{Profitability Index on return on sale (PI)} = \frac{NI}{TR}$$

Where: TC = Total Cost

TVC = Total Variable Cost

TFC = Total Fixed Cost

TR = Total Revenue

P = Price/Unit

Q = Quantity Sold

GM = Gross Margin

NI = Net Income

PI = Profitability Index

Determinants of the growth of small scale fish farming

This was achieved using regression analysis.

This can be specified as follows:

$$Y = \alpha_0 + \beta X_1 + \epsilon_1$$

Where:

Y = Profitability Index ($\frac{NI}{TR}$) as measure of growth of small scale fish farming

X₁ = Age of small scale fish farmer (in years)

X₂ = Level of education (in years)

X₃ = Household size (in numbers)

X₄ = Present worth of investment (₦)

X₅ = Nature of business (1 if bulk, 0 if otherwise)

X₆ = Number of workers (in numbers)

X₇ = Business net income (₦)

X₈ = Access to cooperative (1 if yes, 0 if otherwise)

X₉ = Amount of loan obtained (₦)

X₁₀ = Interest rate (%)

X₁₁ = Repayment period (in months)

X₁₂ = Level of sales by small business within the period of loan

B₁ = Vector Parameter

ε₁ = Error term

4. Results and Discussion

Table 1: Socio-Economic Characteristics of the Respondents

Variables	Frequency	Percentage
Age (years)		
21-30	17	14.2
31-40	48	40
41-50	36	30
51 and Above	19	15.8
Gender		
Male	88	73.3
Female	32	26.7
Marital Status		
Single	46	38.3
Married	60	50
Divorced	8	6.7
Widowed	6	5
Household Size (persons)		
1-4	87	72.5
5-8	26	21.7
Above 8	7	5.8
Educational Level		
No formal education	14	11.7
Primary	16	13.3
Secondary	42	35
Tertiary	44	36.7
Others	4	3.3
Major Occupation		
Farming	75	62.5
Non Farming	45	37.5
Fish Farming Experience (years)		
1-5	79	65.8
6-10	37	30.8
11-15	4	3.3
Secondary occupation		
Civil servants	31	25.8
Trading	25	20.8
Artisanship	2	1.7
Farming	59	49.2
Others	3	2.5
Type of Fish Cultured		
Catfish	75	62.5
Tilapia	12	10
Catfish and Tilapia	31	25.8
Others	2	1.7
Farm size (plot)		
1-2	75	62.5
3-4	38	31.7
4-5	4	3.3
Above 5	3	2.5
Farm structure		
Ponds	85	70.8
Concrete tanks	23	19.2
Both	10	8.3
Others	2	1.7

Sources of Water		
Streams/River	71	59.2
Taps	16	13.3
Rainfall	31	25.8
Underground water	2	1.7
Number of Ponds		
1-3	45	37.5
4-6	56	46.7
7-9	17	14.2
Above 9	2	1.7
Record Keeping		
Keeps Records	93	77.5
No Records	27	22.5
Cooperative Membership		
Member	83	69.2
Non member	37	30.8
Sources of Fund		
Personal savings	23	19.2
Financial institutions	5	4.2
Cooperatives	67	55.8
Microfinance	7	5.8
Family and friends	11	9.2
Combination	7	5.8
Total	120	100

Source: Field Survey, 2017

4.1 Socio-Economic Characteristics of Respondents

As shown in Table 1, the results of the finding revealed that 70% of the small scale fish farmers were between the ages of 31-50 years. This implies that majority of the fish farmers were still in their middle and active age. This is expected to have a positive implication on their farming activities. Most (73.3%) of the fish farmers were male while 26.7% were female. It means that men are more dominant in fish farming business in the study area than women. The result showed that majority of the respondents 50% were married, 6.7% were divorced and 5% were widow. This shows that most of the small scale fish farmers are settled family men and women with responsibilities. These responsibilities would likely make them willing to seek innovations so as to increase their income earning capacity and improve their standard of living. This is in line with Raufu *et al*, 2009.

The household distribution of the fish farmers in the study area showed that 72.5% have household size of 1-4, 21.7% have household size of 5-8 and 5.8% have household size above 8. Higher household number is expected to have

a positive impact on the farm by reducing the number or hired labour and thereby reducing the actual total variable cost incurred. Findings revealed that 11.7% of the fish farmers had no formal education, while 85.5% had one form or the other level of education. This implies that a larger percentage of the fish farmers in the study area are literate and have formal education.

As regards the occupation, 62.5% of the respondents are full time farmers while 37.5% have other occupation as their major work. This showed that majority of the respondents are into fish farming as their major occupation along other occupations. This could have a positive impact on fish farming because the financial resources gathered from other occupation could be used to increase productivity. Majority 96.6% of the respondents have fishing experience of 1 – 10 years. Thus, majority of the fish farmers have engaged in fish farming for many years. The higher the number of years spent in an occupation, it is expected to increase productivity and efficiency.

Data in Table 1 also revealed that 62.5% of the fish farmers cultured Catfish, 10% cultured Tilapia, 25.8% cultured both Catfish and Tilapia and 1.7% cultured other type of fish. It can be

deduced that majority of the fish farmers are still practicing a Mono-culture form of fishing where they only culture one species of fish, this could be due to lack of resources, such as finances or technical knowledge, to practice poly culture. Most (73.3%0 of the respondents had between 1 - 4 plots while 26.4% of the respondents had more than 5 plots. This is in line with the study that most of the fish farmers in the study area are still running their farm on a small scale. 70.8% of the fish farmers used earthen ponds for rearing fishes, 19.2% used concrete tanks, 8.3% used both earthly ponds and concrete tanks and 1.7% used other forms of structures. This means that majority of the fish farmers in the study area used earthly pond for keeping their fishes. 59.2% had streams/river as their source of water, 13.3% had taps, 25.8% had rainfall and 1.7% had underground water. It revealed that the major sources of water among the fish farmers in the study area were Streams/Rivers and Rainfall (in the raining season). Majority (84.2%) of the fish farmers had 1-4 ponds on their farm, This means that most of the fish farmers in the study area had appreciable number of ponds to enhance their profit level.

Record keeping is very essential in fish farming production, because it helps the farmers to monitor all activities on their farms. 77.5% of the fish farmers keep records of their farming operations while 22.5% do not. This could be due to the fact that majority of the fish farmers in the study area are literates who know the essentiality of record keeping. The result also showed that 69.2% are cooperative members while 30.8% are non members. This indicated that majority of the fish farmers in the study area are cooperative members. The importance of joining cooperative by businessmen is not far-fetched, cooperative do not only help their members to solve financial problems (Loan) but also give technical advice to members who are into one trade or the other through occasional seminar organized for their members. This is expected to boost productivity, sales and profit. Fish farming thrives when funds are made available when they are needed. Findings showed that 19.2% of the fish farmers used their personal savings, 4.2% used financial institutions, 55.8% used cooperatives, 5.8% used

microfinance, 9.2% used families and friends, 5.8% used a combination of the sources. The major sources of funds to the fish farmers in the study area as revealed from this study are Cooperatives and personal savings. This can be justified because majority of the fish farmers are cooperative members and also have their secondary occupations, this will make them have some funds saved up for the growth and development of their business.

4.2 Profitability Level of Small Scale Fish Farming

The result of Table 2 showed the profitability level of small scale fish farming in the study area. The result of the Total Revenue (TR) equals ₦1,115,662 this was made up of the total sales from the period, the value of stocks unsold, the value of fish consumed and the value of fishes given out as gifts. The Total Fixed Cost (TFC) equals ₦244,791.25. The major components of Total Fixed Cost with highest cost are Land (rent), Water pump, generator and net fence. The Total Variable Cost (TVC) equals ₦162,195.83. The major components of Total Variable Cost with highest cost are Fish Feeds and fingerlings stocks. The summation of both the Total Fixed Cost (TFC) and the Total Variable Cost (TVC) amounted to ₦406,987.08 which is the Total Cost of production (TC). From the above analysis, it was evident that Total Fixed Cost had a greater portion of the Total Cost of production (TC), this could be traced to the fact that a huge sum was paid on land as rent for fish farming production in the study area.

Gross margin (GM) from fish farming production equals ₦953,466.25 which was derived by deducting the Total Variable Cost of production (TVC) from the Total Revenue (TR). The Net Income from fish farming production equals ₦708,675 which was derived by deducting the Total Fixed Cost of production (TFC) from the Gross Margin (GM). The profitability index (PI) equals to 0.585 which means that out of every Naira earned, about 58 kobo returned to the fish farmers as net income. These three (3) criteria: Gross Margin, Net Income and Profitability Index show that small scale fish farming is profitable in the study area.

Table 2: Profitability Level of Small-Scale Fish Farming (N = 120)

Items	Minimum	Maximum	Mean Value
Revenue:	₦	₦	₦
Level of sales (kg)	1,200	4500	2559.63
Unit price of fish (₦)	350	550	423.58
Total sales	448,000	2,250,000	1,090,600
Value of unsold stocks	0	100,000	13,916.25
Value of fish consumed	2,000	12,000	6,625
Value of fish given as gift	0	10,000	4,520.83
TOTAL REVENUE (TR)	459,050	2,276,000	1,115,662
Fixed cost:			
Land (rent)	0	250,000	83,625
Water pump	0	65,000	24,933.33
Tank construction	0	80,000	15,108.33
Plumbing	0	35,000	9,933.33
Deep well	0	45,000	19,783.33
Shed	0	30,000	10,450
Drag net	0	60,000	8,629.17
Cutlass	0	5,000	2,726.25
Weighing scale	10,000	25,000	13,679.17
Generator	0	80,000	29,416.67
Net fence	0	93,500	21,675.83
Bowls	0	19,000	4,830.83
TOTAL FIXED COST (TFC)	82,200	520,300	244,791.25
Variable cost:			
Fingerlings stocks	15,000	240,000	55,008.33
Fish feeds	8,000	146,200	64,481.67
Fish seeds	0	100,000	13,133.33
Lime	0	7,000	4,011.67
Fertilizer	0	25,000	2,911.67
Land preparation	0	10,000	3,182.50
Transportation	0	15,000	5,150
Labour cost	0	42,000	13,841.67
Other costs	0	3,000	475
TOTAL VARIABLE COST (TVC)	63,000	317,000	162,195.83
TOTAL COST (TC)	172,200	687,400	406,987.08
GROSS MARGIN (TR-TVC)	269,500	2,137,050	953,466.25
NET INCOME (GM-TFC)	(114,350)	1,942,900	708,675
PROFITABILITY INDEX	(0.245)	0.861	0.58533

Source: Field Survey, 2017

4.3 Determinants of the Growth of Small Scale Fish Farming

The result of Table 3 showed the factors that determines the growth of small scale fish farming in the study area. By the adjusted R square of 0.555, it indicates that 55.5 percent variability in Y (Profitability Index) is due to the joint effects of the various explanatory variables in the model. The estimated measure of the goodness of fit (R-square) indicates that the model explains approximately 59% of the determinants of growth of small scale fish farming.

Table 3: Linear regression estimates for the Determinants of the growth of small scale fish farming

Dependent Variable = Profitability Index (NI/TR)			
Variables	Coefficient	Std. Error	t-value
Age of Respondents	0.3582***	0.1249	2.868
Level of Education	0.5267***	0.1857	2.836
Household size	-0.2000	0.2458	-0.813
Present worth of Investment	0.1848	0.2551	0.725
Nature of Business	-0.3029	0.2692	-1.125

Number of workers	0.2052**	0.8023	2.557
Business Net Income	0.3192***	0.6067	5.262
Access to cooperative	0.4128*	0.2565	1.609
Amount of Loan obtained	-0.1040	0.2187	-0.476
Interest rate	-0.5026**	0.2482	-2.025
Repayment period	0.1830	0.1459	0.125
Level of sales with loan period	0.3527	0.2926	1.205
R-squared	0.596		
Adjusted R-squared	0.555		

***, ** and * are significant levels at 1%, 5% and 10% respectively.

Source: Field Survey, 2017

The result of the analysis shown in Table 3 revealed that age of farmers, level of education, number of workers, business net income, access to cooperative and interest rate (although it had a negative effect) were significant determinants of small scale fish farming in the study area while other factors tested were not significant. Each of these significant variables is discussed below.

Age of farmer has a positive effect on Profitability at 10 percent level of significance. This means that as farmers' age increases so is the profitability. This may be due to the fact that years of experience increase with age, this agrees with the result of Ugwumba and Chukwuji, (2010) that years of fish farming are positively correlated with profitability. The result also showed that level of education has a positive effect on fish farming profitability, Fish farming involves technical areas such as stocking, feeding, occasional change of water, record keeping etc. all these need a given level of literacy i.e. education to ensure better performance and higher productivity. Therefore, the higher the educational level of fish farmers, the higher their profitability.

Number of workers also had a positive effect on fish farming profitability and significant at 5 percent. This shows that as the number of workers increase, profitability also increase. The reason behind this is that when there are enough workers on the farm, each worker will focus on his/her own job thereby ensuring efficiency on their job, efficiency thus is expected to bring about greater productivity and hence profitability. The Net Income from the business was also a significant determinant of profitability in fish farming, all things being equal, when Net income increase, profit also will

increase. Access to cooperative had positive effect on profitability at 1 percent level of significance i.e. as farmers join cooperatives; their profitability level is expected to increase. This is because members of co-operative society get access to inputs and credit which attracts government attention for aids to increase fish output, to be informed on new fish production innovations, and to gain knowledge of improved practices. All these are more benefits derived from cooperatives that made members to have edge over other fish farmers who are not members of cooperatives.

Interest rate on the other hand had a negative effect on profitability level of fish farming and it was significant at 5 percent. This implies that as interest rate increases, profitability decreases. The higher the interest rate charged on loan/credit, the higher the total amount repaid; when the amount repaid is higher, the possibility of higher profit is not certain.

5. Conclusion

From the result obtained from this study, it can be concluded that Fish Farming in Egbeda Local Government Area of Oyo State is profitable; this can be traced to some reasons which were also discovered from the study: majority of the fish farmers in the study area were literates. i.e they possess educational qualification which is expected to boost their performance and productivity and hence profitability. Fish farmers in the study area are members of cooperative society and also have access to cooperative loan thus cooperative formed the main source of finance for their business. Cooperatives have been known for providing technical, educational and financial aid to their

members. If well utilized by their members, it would lead to greater profitability in their businesses. It was found out that age of farmers, level of farmers' education, number of workers, business net income, access to cooperative and interest rate are the major factors determining the profitability of small scale fish farming in the study area.

6. Recommendations

Based on the conclusions above, the following recommendations are offered:

- Cooperatives at all levels should improve in emphasising their existence and the benefits to farmers so as to help them increase their productivity and profitability.
- Government at all levels should provide all forms of aid needed by cooperatives to better perform their roles and carry out their activities.
- Government should try helping the small scale fish farmers by providing them loans with loans that require no collateral and which have little repayment interest rate.
- Lastly, the main centre of this, which is the farmers, should be sensitive and willing to accept changes and increase their production activities by joining cooperatives.

References

- Adebo G.M and Ayelari T.A (2011). Climate change and Vulnerability of fish farmers in Southwestern Nigeria, *"African Journal of Agricultural Research"* Vol. 6(18), pp. 4230-4238.
- Afolami C.A. and Oladimeji (2003); "Producer Response to Retail Egg Price in Ogun State Nigeria," *Journal of Animal Production* 30 (1) pp 81-86.
- Dalton P.J (1982) Agriculture Credit through Cooperative Rome, Food and Agriculture Organization, pp 114
- Delagado C.L., Wada J., Rosegrant N.J., Meijer M.W., AhmedS.M. (2008) Fish to 2020 Supply and Demand in changing Global Market World Fish Centre Technical Report 62.
- Federal Department of Fisheries (1995); FDF Statistics, 1995 P. 20-25.
- Ijere M.O (1981), Special Study on Nigerian Agricultural Cooperative Manpower Development, Mass Enlightenment and Publicity for the 4th National Development Plan 1981 – 85. FDAC, Lagos.
- Ijere M.O (1992), Prospects of Nigerian Cooperatives, Enugu, ACENA Publishers, pp 177.
- Mbanasor J.A. (2002); "Resource Use Pattern among Poultry Enterprises in Abia State Nigeria." *Nigeria Journal of Animal Production* 29(1) pp 64-70.
- Ofuoku A.U and Urang E. (2011) Effect of cohesion on loan repayment in farmers' Cooperative societies in Delta State, Nigeria. *International Journal of Sociology and Anthropology* Vol. 1(4) pp. 070-076
- Oladeji J.O and Oyesola J (2000), Comparative Analysis of Livestock Production of Cooperative and Non Cooperative Farmers Association in Ilorin West LGA of Kwara State, Proceedings of 5th Annual Conference of ASAN, held in Port-Harcourt, Sept. 2000, pp.19 – 22.
- Omitoyin, O. (2007): Fisheries department in Nigeria, Problems and prospects. A presentation by The Federal Director of Fisheries in the Federal Ministry of Agriculture.
- Osuntogun C.A (1990), The Cooperative Marketing of Agricultural Produce in the Western State of Nigeria, with Special reference to some Factors Influencing Members, Loyalty to their Cooperative Societies, unpublished Ph.D Thesis, University of Leeds, Lagos.
- Otto Godly and Wilfred Ukpere, (2011). Credit and thrift co-operatives in Nigeria: A Potential source of capital formation and employment, *African Journal of Business Management* Vol. 5(14), pp. 5675-5680.
- Raufu, M. O, Adepoju A. A., Salau A. S. and Adebisi O. A. (2009). Determinants of

- yield performance in small scale fish farming in Alimosho local government area of Lagos state. *International Journals of Agricultural Economics and Rural Development* 2 (1). Pp 9-14
- Ubani P.O (1980), *Improving the Members' Welfare through Cooperative Activities. A case of Imuanunu Nsu Farmers Multi-Purpose Cooperative Societies.* Nsu, Imo State Department of Agricultural Economics/Extension, University of Nigeria, Nsukka, pp 9 – 92
- Ugwumba COA, Chukwuji CO (2010). *The economics of catfish production in Anambra State, Nigeria.* *J. Agric. Social Sci.*, 6(4): 105109.