

## Analysis of Marketing of Catfish in Ahiazu Mbaise Local Government Area of Imo State, Nigeria

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### Abstract

The study examined the marketing of catfish in Ahiazu Mbaise LGA of Imo State. The objective of the study was to analyse the marketing of cat fish in terms of cost and returns, the determinants of net returns and the problems facing the marketers. Ten communities were chosen, out of which 3 (three) farms were sampled making up 30 (thirty) respondents purposively selected. Data collected were analyzed using descriptive statistics and multiple regression model. The cost and return analysis showed the venture to be profitable. Feeding cost accounted for 77.3% of the total cost, purchase cost accounted for 10.72% of the total cost, medication was 6.1%, labour was 3.97%, water 3.411, while transportation cost and depreciation accounted for 1.79% and 2.22% respectively. The linear functional form was chosen as the lead equation. From the result of the regression analysis, age, quantity of fish handled and amount of credit were the significant variables that influenced income of the marketers. These variables equally conformed to *a priori* expectation and economic reasoning. The major problems that the farmers faced were bad pricing, lack of access to credit and low awareness. Based on findings from the study, it was recommended that the significant variables that influenced the income of the marketers should be considered in policy issues. There should be improvement in basic amenities to reduce costs and more awareness on the benefits of catfish marketing should be carried out. This can help draw more participants in the production, marketing and consumption segment of the commodity.

**Keywords:** analysis, cat fish, marketing,

### Introduction

Catfish (*Claria gariepinus*) are a diverse group of any ray-finned fish. Biswas (1989) stated that fish makes an important contribution to world protein supply. Catfish is an important source of protein in Nigeria. In many parts of Nigeria, fish constitutes up to 40% of the protein intake and may reach up to 80% in the cheapest source of protein for rural dwellers in Nigeria (Chike, 2008).

Fishing is an ancient activity of mankind. It has developed throughout the world. Almost all countries and world institutions have fishery development programmes. FAO (2006), stated that a revolution has occurred in the potential of fisheries to contribute to a new international order by helping the developing countries to secure and maximise opportunities in the industry.

In the last three decades, the Federal Department of Fisheries (FDF), statistics show that catfish consumption in Nigeria has been increasing at no less than 5.6% per annum, while catfish production has been increasing at a relatively low rate of 3.2% per annum (FAO, 2006).

Generally, fish play an important role in the diet of many African communities and a large number of families earn a living from capture fisheries, fish farming, processing and marketing as meat consumption has been growing at a slower rate, the share of fish protein in total animal protein supply has increased.

Catfish is one of the commercially most important fresh water fish in African. The total catfish reported in 2011 was 29, 250t. The countries with the largest catches were Mali (150,91t) and Nigeria (9.994t). Catfish has been imported for purposes of aquaculture and game, marketed live, fresh and frozen; eaten broiled, fried and baked. For many developing nations, catfish trade represents a significant source of foreign currency earnings in addition to generation of income, source of employment and provider of food security and nutrition (FAO, 2006).

According to (FAO, 2005), catfish consumption in Nigeria has been increasing at no less than 5.6% per annum, while catfish production has been increasing at a relatively low rate of 3.2% per annum.

Studies recently stated that Nigeria produced just over 700, 000 metric tones of fish in 2007, while consumer demand was at 2.66 million metric tons and was met only in part by imports of about 840, 000 metric tons that year. This emphasises the need to strengthen the fish market in order to stimulate production, thereby enhancing income and living standard of participants in the value chain.

Marketing is the sum total of all business activities in the movement of commodities from production to consumption. (Adekanye, 1998). Tall, (2004), looks at marketing as a broader perspective as a total system of interacting business activities designed to plan, price, promote and distribute wants, satisfying products and services to all the stakeholders in the system.

Though this is a very important sector in our economy, we have neglected it and the people connected with it. Lorenzl (1990), stated that the problem facing food and agricultural marketing in developing countries in general are many, complex and multi-dimensional. The government of Nigeria overtime seems to have placed little or no attention on artisanal fish farming. The result is that activities in the subsectors are dominated by private sector presence with little or no encouragement from the government. Therefore any attempt aimed at improving a country's marketing system has to start with an imperial analysis of the problem and strategies based on research findings.

Joshi, (2006), identified two main problems of catfish sector as organizational and mechanical problems. These problems affect efficiency in the value chain of the commodity.

### **Objective of the Study**

**The objectives of the study are to:**

- i. Examine the cost, returns and net returns from the business
- ii. Identify the determinants of net returns of marketing of catfish in the study area.
- iii. Identify major constraints to efficient marketing system of catfish and to make appropriate recommendation based on the findings of the study

### **Methodology**

This research was conducted in Ahiazu Mbaise Local Government Area of Imo state, Nigeria. The headquarters is Afor Oru. It has an area of 144km and a population of 170, 902 persons . Purposive sampling technique was used to select respondents. Ten communities (10) were purposively used for the study from which three (3) catfish farmers were selected making a total of thirty (30) respondents.

The first was analyzed as follows:

$$E = f - n \dots\dots\dots(1)$$

Where

E = net return, f = total return and n total cost

The second objective on the determinants of income of the marketers was analyzed using an Ordinary Least Square (OLS) regression model. The model is implicitly stated as follows:

$$Y = f(X_1, X_2, X_3, X_4, X_5, X_6, X_7)$$

Where Y = Net return (as expressed in Equation 1)

X<sub>1</sub> = Marketing experience (years)

X<sub>2</sub> = Age (years)

X<sub>3</sub> = Household size

X<sub>4</sub> = Educational level (years)

$X_5$  = Quantity of fish handled (kg)

$X_6$  = Ammount of credit used (#)

## Results and Discussion

The results from the analyses are presented and discussed in the section.

### Cost and return of catfish farmers

The cost and returns of catfish farmers is shown in the Table 1.

**Table 4.4: cost and return of the catfish marketers**

Variables	Values (₦)	%
<b>Average cost</b>		
<b>Purchase cost</b>	18866.67	10.72
<b>Transportation cost</b>	3156.66	1.79
<b>Water</b>	6000	3.41
<b>Medication</b>	1073.33	6.1
<b>Feed</b>	136200	77.37%
<b>Labour cost</b>	7000	3.97
<b>Depreciation</b>	3736.06	2.12%
<b>Total cost</b>	176032.72	
<b>Average revenue</b>	212,083.53	
<b>Net return</b>	36050.81	

Source: Field survey, 2013

From the Table 1, net return obtained by the fish farmers shows that the business was profitable. This conforms to the findings of Christensen (1995) that income from fish farming was high and can improve the yearly earnings of rural farmers. The monthly net return recorded by the farmers was ₦36050.81 showing that the business was profitable. Cost of feed and purchase cost were the major cost components incurred by these fish marketers. Also, the net return was far more than the National Minimum Wage in Nigeria which is ₦18,000. Thus, the business is relatively high yielding as a result of the increasing demand for fish in most parts of the country.

### Determinants of the net return of the fish marketers

The regression result of the determinants of net return of the fish marketers is shown in Table 2.

**Table 2: regression result of the determinants of net returns of cat fish marketers.**

Variables	Linear	Semi log	Double log	Exponential
Constant	-426.720 (-012)	-526678.602 (-1.488)	3.807 (.351)	9.609 (9.007) ***
Farm	2033.627 (1.173)	6721.689 (.391)	.077 (.146)	-005 (-.091)
Experience	-466.368 (-3.207) ***	-63910.424 (-2.095) *	-1.548 (-2.666) **	-.010 (-4.852) ***
Household size	392.661 (.186)	-7590.972 (-.354)	.005 (.008)	-0.13 (-.200)
Level of education	989.561 (.978)	-14963.757 (-.589)	-.497 (-.639)	.009 (2.030) *
Quantity of fish handled	4.778 (1.893) *	37494.016 (1.475)	1.105 (1.920) *	9.648E-5 (1.290)
Amount of credit	0.45 (3.691) ***	41791.067 (1.193)	.376 (3.351) ***	1.517E-6 (4.181) ***
R <sup>2</sup>	.772	.791	.653	.730
R <sup>-2</sup>	.699	.651	.602	.644
F-value	10.615***	5.673***	2.818***	8.493***

Source: Field survey 2013.

Figures in parenthesis are t values , \*\*\*. Significant at 10% ,\*\*.: Significant at 5% ,\* Significant at 10%

From Table 1, the linear regression was chosen as the lead equation, given that it has the highest number of significant variables, F-ratio, adjusted R square and equally conforms to *a priori* expectation.

The R<sup>2</sup> was 0.772 which implies that 77.2% of the total variation in the dependent variable was accounted for by the independent variables while 22.8% of the variation was due to error.

The significant variable that influenced the net return of the marketers were age (X<sub>2</sub>), quantity of fish handled (X<sub>5</sub>) and amount of credit (X<sub>6</sub>).

The variable X<sub>2</sub> (age) was positive and significant at 1% indicating that there was a direct relationship between age and net return. This is also in line with the assertion of Bello (2000) that age has positive correlation with acceptance of innovation.

The variable X<sub>5</sub> (quantity of fish handled) was positively significant, indicating a direct relationship between quantities sold and net return. This is because the more quantities sold, the more income and thus more net return or profit made

The variable  $X_6$  (amount of credit) was positively significant, showing that there was a direct relationship between amount of credit used by farmers and their net return meaning that with higher credits obtained, there was an expansion in scale of operation leading to a increased net return. FAO (2005) states that without credit facilities, fish farming will remain at the small scale level.

### Problems of catfish marketing

The problems faced by the catfish marketers in the study area is shown in t Table 3.

Table 3: problems faced by the catfish farmers

Problems	Frequency	Percentage
Transportation cost	14	12.9
Low pricing	22	20.37
Lack of storage facilities	11	10.18
Awareness	17	15.74
Labour cost	8	7.40
Access to credit	21	19.44
Access to water	15	13.88

Source: Field survey 2013. Multiple responses recorded.

Table 3 shows that majority of the marketers faced the problem of low pricing (20.37%) of their product probably because economic status of the consumers, availability of substitutes and competition for sales.

Also in the result, access to credit was the second major problem (19.44%), which shows that the marketers had little or no access to credit. This could be as a result of the problems of accessing loans and the marketers' level of exposure. The other problems faced include, awareness, availability of water, transportation, lack of storage facilities and labour cost.

### Conclusion

The study has shown the nature of catfish marketing in terms net return in the business, the determinants of net return of the marketers, as well as problems inherent in the system. Furthermore, it was concluded that catfish marketing in the study area was profitable despite the problems encountered while some socioeconomic factors influenced the level of net return in the business. Based on the findings from the study, the following recommendations were proffered:

- The financing of catfish marketing requires access to affordable credit facilities to enable expansion in scale of operation and greater return. Thus, access to credit should be improved.
- Farmers should join cooperatives in order to fend off low pricing and collectively tackle other problems facing the business.
- Socio economic infrastructures should be provided to reduce cost of running the business and make the marketing more efficient.
- The significant variables that influenced the net returns of the marketers should be taken into consideration in policy issues.

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