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**Nwabunike M. O.**  
Department of Fishries and  
Aquaculture, Faculty of  
Agriculture and Natural  
Resource Management, Ebonyi  
State University, Abakialiki,  
Ebonyi State, Nigeria.

## Constraints of Fish Marketing in Abakaliki Metropolis

**Nwabunike M. O.**

### Abstract

The study analyzed the constraints militating fish marketing in Abakaliki metropolis, the objectives of the study were to analyze the constraints of fish marketing in the study area, as well as make necessary recommendations for the improvement of fish marketing in the study area. Oral interview schedule was used to collect data from seventy (70) respondents who were randomly selected. The data were analyzed using statistical percentages and mean score analysis. Majority (21%) of the marketers accepted they sold only Mackerel (*Trachurus japonicus*) while the lower population (1.83%) of the farmers sold only Bonga (*Ethmalosa fimbriata*). Majority (48.57%) of the marketers sold fishes mainly in fresh form, while lower population (12.86%) of the marketers sold fishes both in fresh, dry and smoked form. The mean score analysis in the form of a five-point likert scale showed that the most accepted factors that affect the quality of fish handling include; consumer's choice (3.7) and inadequate storage facilities (3.5), while the most rejected factors were; lack of cold room (2.2) and fear on the side of the fish marketers (2.4). The research showed that the most accepted constraints to fish marketing in the study area are; problem of processing (3.9) and inadequate spacing in fish marketers' stalls or shops (3.7).

In conclusion, it has been observed that fish marketing in Abakaliki urban is a lucrative venture. Although, fishes are marketed in different forms either as fresh, smoked or dried fish. Marketers have lots of challenges, which the researcher has tried to proffer solutions to as attested by the majority of the respondents. Based on the research findings, the following policy recommendations are therefore proffered. Fish marketers should form a co-operative society to enable them obtain loan from financial institutions so as to expand their marketing activities. Government and private organization should encourage fish marketers by building an organized market and effecting free trade within the study area. Government should provide more cold rooms to enable fish marketers get fish for sale easier. Government should provide processing places/spaces to enable those who want to engage in fish smoking to cope. There should be subsidy in price of fish by the government so that everybody will have access to fish, this is because majority of the consumers within the study area are poor. Government should also provide transportation facilities and good infrastructural facilities within the study area to encourage the fish marketers.

**Keywords:** Fish, marketing, constraints, fish handling

### 1. Introduction

#### 1.1 Problem Background

Hunger and malnutrition remain amongst the most devastating problems facing the world poor and needy [21]. About 80 to 90 million people have to be fed yearly and most reliable source of protein for many is fish, yet millions of people who depend on fish are faced daily with the fear of food shortage. With the population of Nigeria on the rise, there is a corresponding demand for fish consumption. Thus, there is the need for a suitable agricultural system to meet the increasing demand for food, and also maximize the utilization of the available limited resources without much wastage. In view of this, integrated fish farming fit exactly into this. Integrated fish farming is a diversified and coordinated way of farming with fish as the main target along with other farm products [8].

Despite the abundance of human and natural resources, Nigeria depends largely on importation to meet its fish consumption needs. Fish is one of the most diverse groups of animals known to man with more than 20,500 species. In fact, to many Nigerians on the coastal areas, creeks and rivers, fish is one of their major sources of protein which is essential for healthy human growth. The shortfall has resulted in a low animal per capital consumption rate of 7.5 kg against the 13 kg recommended by the food and agriculture organization [10]. Fishing is as old as mankind. It has been established throughout the world. Of the 36 states of the federation, nine are located on the coast with access to the Atlantic Ocean. With this Scenario, the natural

**Correspondence:**  
**Nwabunike M. O.**  
Department of Fishries and  
Aquaculture, Faculty of  
Agriculture and Natural  
Resource Management, Ebonyi  
State University, Abakialiki,  
Ebonyi State, Nigeria.

expectation is that Nigeria should not only be self-sufficient in fish production but should be an exporter of aquatic foods. Sadly, however, Nigeria imports between 700, 000 and 900, 000 metric tons fish annually and is yet to partially meet a shortfall of 1800,000 metric tons <sup>[10]</sup>. In the industrial fishing sector, over 20,000 tons of fish caught annually are discarded due to small size, although in desperate situation. These fish are sold for consumption.

Notwithstanding, many of the world's fisheries are challenged by a combination of overexploitation, habitat damage and poor economic returns. For the first time ever it appears the world's total harvest of fish from wild stocks is in decline because of over fishing <sup>[24]</sup>. In an attempt to address these difficulties managers are looking for innovative ways to address the tragedy of the commons' whereby individuals operating in their own self-interest over exploit a common- pool resource which is open to all <sup>[23]</sup>. At the forefront of 'new' thinking about fisheries is the so-called ecosystem approach <sup>[29]</sup> that places a much greater weight on integrating management across fisheries and maintaining healthy ecosystems (habitats, biodiversity, resilience to shocks etc). While an integrated approach to fisheries is helpful, new approaches are most certainly required to prevent further declines <sup>[28]</sup>. Without careful attention by regulators to fisher incentives little will be accomplished. We contend that the biggest barrier to sustaining fisheries is not our ignorance of marine ecosystem, nor is it a lack of goodwill from those involved in fishing, but rather, the stumbling blocks to better fisheries management is a profound lack of understanding of the behavior of the oceans greatest predator – the commercial fisher.

Fish is a living aquatic resources exploited for food, recreation and other economic purposes. The term covers both fin fishes and other aquatic vertebrates like, crocodiles, shell fishes and even sea weeds.

Marketing is a process of exchanging goods and services from one person to another with reference to price. A fish market is a market place used for marketing of fish and fish products. However, fish marketing essentially consists of all the activities involved in delivering fish from the producer to the consumer, while distribution provides channels that link the marketing institutions and producers together. Fish marketing may be broadly defined as all those functions involved from the point of catching of fish, to the point of final consumption. As the fish, like any other production moves closer and closer to the ultimate consumer, the selling price increases since the margins of the various intermediaries and functionaries are added to it. The price efficiency is concerned with improving the operation of buying, selling and other connected aspects of marketing process so that it will remain responsive to consumer direction <sup>[7]</sup>.

Marketing plays an important role in a market economy. The role of marketing as an incentive to fish production and productivity cannot be over emphasized. The marketing of agricultural commodities in Nigeria involves various markets or exchange points. The number of exchange points depends on the nature of the point of production and that of consumption. If the marketing process is efficient, it will go a long way in providing sufficient food to the populace through the process of market mechanism. The influence of market mechanism on price to a great extent determines the amount of food which peoples can afford. The effect of marketing process is assessed by the ability of the market to create time, place form and possession utility. Since rapid preservation and transport became available in the 19<sup>th</sup> to 21<sup>st</sup> century fish

markets can technically be established at any place. In marketing, fish passes through various market participant and exchange pounds before they reach the final consumer. These market intermediaries are the whole sellers and retailers. Both play important role in the marketing system.

Furthermore, due to the cumbersome nature of fish distribution channel, the local fish seller is faced with the problem of profit maximization. Thus, the result is that activities in this sector are mainly dominated by private sector presence with little or no mobilization from the government. Therefore, any attempt used at improving a country's marketing system has to start with a correct analysis of the problem.

## 1.2 Research Questions

Fish marketing in Nigeria, however, is hinged on some basic questions: what do consumers want? Which species? What price, size, form, quality, quantity and grading? Others are: What services do they want? When to sell? Where do people buy? etc. According to <sup>[31]</sup>, it is important to know that the lesser familiar a species is, the greater the risk that it will be rejected or take a long way to build up demand for it, people's taste are formed slowly and strongly influenced by traditional eating habits. As prices rise, less is bought and as prices fall, more is bought and poor people are more likely to look for cheaper substitutes than rich people. Thus, in terms of the price dynamics, marketing costs and the marketing functions inherent in the distribution of fish and in relation to how efficient the marketing system is. Spatial price behavior is an important indicator of overall market performance in terms of marketing efficiency <sup>[22]</sup>. The constraints of adequate capital needed for efficient marketing activities and problems of diversification of the economy which gives equal priority to all real productive sectors. In many countries, a common problem in fish marketing is loss of profit due to fish spoilage, post-harvest losses occur more frequently in the rainy season than in the dry season. Thus, the present development encountered by the fish traders according to <sup>[23]</sup> include: lack of improved technology for the management of fish production, the current method of harvesting are inefficient, wasteful and exploitative. Problem of establishing adequate fishing, production and marketing policies, devoid of sentiments, tribalism and ethnicity the major constraints facing fish marketing in Nigeria are pronounced in the various pre-harvesting methods of fishery products in Nigeria. Such methods involve the usage of mainly artisanal and to an extent, commercial (trawler system). Infrastructural problems particularly transportation do militate against the development of fish marketing in Nigeria.

- What are the constraints of fish marketing in the study area?
- What are the various species of fish available in the markets and necessary recommendation?

## 1.3 Objectives of the Study

The broad objective of the study is to determine the economics of fish marketing in Abakaliki, Ebonyi state.

The specific objectives are to

- 1 Analyze the constraints of fish marketing in the study area.
- 2 Make necessary recommendations for the improvement of fish marketing in the study area.

## 1.4 Justification for the Study

It is aimed that this study will proved the relevant data required for improving fish marketing in Abakaliki market;

such as poor socio-economic environment like access road, developed market, school for children etc, poor storage facilities and fish spoilage, effect on cost-returns of fish marketers, constraints of fish marketing such as transportation, Epileptic power supply in the cold room, high cost of fish, poverty, financial and processing problems.

Therefore, this research will serve as a secondary data to other researchers who may be interested in carrying out research in the same or related topic.

## 2. Literature Review

### 2.1 Fish Production and Nigerian Economy

Official figure indicates that Nigeria has the largest population of any African country with a limited and almost fully exploited natural resources, Nigeria is the most important marketers for imported fish in West Africa. This deficit is only fractionally offset by fish importation [6]. The sources of domestic fish production are captured fishers from rivers, lakes and seas and aquaculture. However the catches of artisanal fishermen greatly contribute to meeting the requirements. At present, about 70% of the total fish demand is met from domestic fish production. It is appropriate to stress that Nigeria is blessed with vast area of both swampy brackish water in the coastal states and suitable sites in the inland states where fish farming can be practiced on an extensive scale. Thus, the alternative production possibility of supply and meeting domestic for fish are fish farming, the development and expansion of industrial fishing and fish importation [5]. [3] revealed the profitability of fish farming in the delta areas. The major fish producing areas in Nigeria comprise principally Niger- Benue complex, the kanji lake, Lake Chad, Bendal state, River state, Cross river state, Osun-Ogun river system, Sokoto state, Lagos state, Gongola state, Ondo state and Kwara state. Frozen fish is landed at southern parts, Lagos states, and port-Harcourt. Smoked and sun dried fishy are got from kanji lakes, river Niger and Lake Chad respectively. Because of excess fish in the production area and lack of it in the hinter land, the need for fish distribution and marketing arises. To this effect, transaction with the exporting countries (Japan, USSR), the importing companies have to obtain foreign exchange allocation from the federal government. It follows therefore, that a large portion of the country's foreign exchange earnings are spent on the importation of fish for domestic consumption. This will have an adverse effect on the economy of the country especially at this period when there is economic instability.

Apart from the adverse economic factor, imported fish (frozen fish) marketing possesses some problems to the indigenous fishing industry. It however, has a social impact by raising the general low protein consumption level in human diet. An important social impact on the economy is the job opportunity afforded to large member of the population who would have been jobless considering the unemployment situation in the country. A number of people are involved in the marketing system. The viability and the profitability of the frozen fish industry have attracted a lot of potential investors who have contributed immensely to the investment ventured of the economy.

Fish is a major source of protein and its harvesting, handlings, processing and distribution provides livelihood for millions of people as well as providing foreign exchange earning to many countries [5]. Thus, appropriate processing of fish enables maximal use of raw materials and production of value-added products which is obviously the basis of processing

profitability. [4] and [13] reported that the development of appropriate fishing machinery and techniques that employed effective production, handling, harvesting, processing and storage, cannot be over emphasized especially in the age when aquaculture development is fast gathering momentum in Nigeria.

### 2.2 Fish Handling

Fresh fish after capture should be properly handled if the keeping quality and the shelf life are to be improved reasonably [18]. One of such good handling practices are to ensure that capture lived fish are not allowed to struggle and die asphyxia or oxygen starvation. Struggling after capture, except in the case of the cat-fishes, will hasten spoilage post-mortem by accelerating chemical reactions in the flesh of the fish. This will reduce the period the fish will remain in rigor or stiffened, thereby, accelerate bacteria attack and spoilage [11]. Fish must be handled with utmost care so as to reduce the rate of deterioration as well as preventing contamination with undesirable micro-organisms substance and foreign bodies and also avoiding physical damage of edible parts [23].

Thus, good handling of fish from points of harvest to consumption is very essential and the quality of fish can only be maintained if only suitable containers are used in its processing, transportation, distribution, and marketing. Fish handling procedures encompass all the procedures aimed at maintaining food safety and quality characteristics from the time the fish is caught until it is consumed. The fish handling facilities at landing sites must be designed in such a way to avoid losses from spoilage under all conditions. Such facilities should include electric power supply, icing facilities, fresh water, and smooth-leveled road that wheeled place [28]. Poor handling of fish catches on board coupled with the distant location of the fishing grounds poses great setbacks to the techniques of fish marketing.

However, fish marketing in Nigeria, is hinged on some basic questions: what do consumers want? Which species? What price, size, form, quality, quantity and grading? Others are what services do they want? When to sell? Where do people buy? Etc. According to [29], it is important to know that: the less familiar a species is, the greater the risk that it will be rejected or take a long time to build up demand for it. Peoples taste are formed slowly and strongly influenced by traditional eating habits. Thus, in Nigeria market, a fall in income per head results in the reduction of fish to be purchased, an awareness campaign about the importance of fish to human health will lead to increase in the purchase and consumption rate, a growth in population will lead to an increase in fish demand, a bumper harvest in other sectors of Agriculture, results in more money in circulation hence increase in demand for fish and a ban on fish importation leads to a rising demand for local fish.

### 2.3 Marketing and Distribution Channels

Marketing and distribution channels are important characteristics in the process of getting produce from source to consumers. However, marketing channels is an identifiable pathway through which goods and services flow before reaching the final consumer. [30] On the other hand describes marketing institutions through which goods or services are moved from their producers to their consumers [22]. Categorized marketing channels into two Viz:

- ✓ Centralized channels
- ✓ Decentralized channels

### 2.3.1 Centralized Channels

This deals with agents who serve as middle men between producers and consumers [24]. Thus, in these channels, commodities are assembled in large central and terminal marketing where they are purchased by wholesaler or processor from farmer's agents.

### 2.3.2 Decentralized Channels

This is a kind of channel where both consumers and agents can buy, directly from the producers [24]. Thus, here, the channels does not use such established large market facilities rather wholesalers and processor purchases directly from the farmers. [17] stressed that processed fish is sold as smoked or dried without varieties as fish fingers, cakes and other ready to the serve fish foods to stimulate wider interest in marketing, distribution and consumption. Thus, fish supply and marketing suffer from various setbacks ranging from shortage of supply, price fluctuations due to drying up of source, poor distributions and length of chain, spoilage in transit etc [7] Furthermore, due to the cumbersome nature of fish distribution channel, the local fish seller is faced with the problem of profit maximization.

### 2.4 Importance of Fish Marketing and Distribution

This focuses on the negative effect of fish imports on the economy of Nigeria. These effects are in terms of the foreign exchange components which constitute a drain on the foreign reserves. There is also a lack of production substitution for imported fish species. The major species imported are *sardinella eba* (sardines) mackerel spp (mackerel) and hake (stock fish). Spatial price behavior is an important indicator of overall market performance [20] in terms of marketing efficiency. However, an efficient marketing system stimulates production. Producers are likely produce more if they are able to sell at reasonable prices. Similarly, an efficient marketing system stimulate consumption as consumers are likely to buy more, if they are able to purchase their requirements in the right form, place, time and at a minimum cost for a maximum satisfaction [7].

### 2.5 Marketing System

Broadly fish marketing system in the country can be classified into two:

- i. The modern chain distribution system principally for imported frozen fish.
- ii. The traditional fish collection and distribution.

There are mainly two forms of fishes marketed. They are namely:

- i. Fresh fish, live fish, cooked fish and pepper soup.
- ii. Preserved fish which include; smoked fish, sun dried fish and frozen.

Fresh fish is available only to the people in the production areas. Smoked fish and sun dried fish are gotten from artisanal fishery (Kanji Lake, River Niger, and Lake Chad) while frozen fish is gotten from the commercial or industrial sector. A number of practices are adopted among the fresh fish sellers to minimize losses due to spoilage. However, fresh fish is generally more expensive than frozen fish in Nigeria.

Furthermore, smoke- drying fish is practiced by artisanal and subsistence fishermen. The ovens for smoking vary from open air raised platform to large smoke houses. Thus, attempts have been made to improve on the traditional methods of smoking

by constructing more efficient kilns or ovens of metal drums, iron sheets or of burnt bricks and by increasing the capacity of the ovens to handle larger quantities of fish per smoking time [19]. Observed that smoked fish form bulk of fish products and that it is estimated that over 75% of the total landings are sold smoked. Thus, this system of pricing exists at retail level and fish are displayed in open shelves in the market.

### 2.6 Factors Affecting Fish Marketing in Nigeria

There are several factors in the environment which have various impacts on fish marketing in Nigeria. These factors include: Economic factors: This is a situation where by majority of the population cannot meet up with their needs in terms of money resulting from falling incomes per head of household and unemployment, hence many people have less money to buy fish. Political factor: this has to do with people in power, if majority of people who are in control can circulate money, there will be enough money to buy fish, but if money is not circulated it will be difficult to buy fish.

Demographic factor: this factor deals with the population of a given place, the increase in number of people in a place increases the demand for fish, while decrease in population decreases the demand for fish in a given place.

### 2.7 Constraints of Fish Marketing in Nigeria

Marketing involves a lot of problems which often times hinder the objectives of the producer which is to satisfy consumer wants and to ensure the profitability of the firm. Profitable marketing of fish is a constant challenge to the industry [2]. observed that the problems of agricultural products are not the instability of the marketable surplus which is affected by loss in the distributive system. Then unavailability of adequate transportation (roads, vehicles, rails etc) also hinder effective distribution of goods from one point to another. Lack of capital also constitutes a problem in the marketing process. Thus, marketing problem to a great extent hinder effective marketing of products. The major constraints facing fish marketing in Nigeria are pronounced in the various pre-harvesting methods of fishery products in Nigeria. Such method involves the usage of artisanal and to an extent, commercial (trawler system). These systems are not well developed and prone to wastages. The post harvesting, which primarily involves processing, storage and preservation is in the lowest ebb. It should be noted that fishery products are extremely fragile and the type of physio-chemical techniques used in processing and conservation have a large part to play in targeting the market and the prices.

However, another main constraint of fish marketing in the low income sector of the population is price. It should be noted that prices are likely to be high in areas close to large and growing urban markets with good access to transportation. There is clearly a demand for fresh fish in both the urban and rural areas and all fish caught or farmed is easily sold in rural areas. Rural producers think that the premium will be paid for fish in the urban or pre-urban markets but are faced with transport problems [4]. Loads of fish in the back of pick-ups often serve as a platform for other heavy cargoes and passengers to rest upon. Smoked fish are frequently packed in large open weave baskets or trays which offer no protection from dusts, rain of insect infestation, which weight is so much that their contents has to get crushed and fragmented. The conditions under which fish are kept and offered for sale at final market points for the most parts often extend this pattern of indicate handling that began at the landing at that early stage are difficult to

rectify at the later stage. Major market center for the most part lack adequate receiving and bulk storage facilities for their fresh and smoked fish, a situation which impedes the development of a true wholesaling sector within the marketing system, [10].

All this has a detrimental effect on a rapidly growing industry. The situation has been steadily improving over the last couple of years but a vast amount of restoration works remains to be done. At all times, the road condition and poor transport links in general contributes to produce wastage and limit the distribution of fresh increase in the marketing margins as transporters/ wholesalers recover the high cost of vehicle maintenance from consumers. Also, demand and supply in combination with the transaction cost of marketing influence the price that fish farmers can charge for their products.

### 3. Materials and Methods

#### 3.1 Study Area

Abakaliki urban, Ebonyi state is the study area. It consists of two local government areas, Abakaliki and Ebonyi local government area. Abakaliki urban is the capital of Ebonyi state, the area is bounded in the east by Izzi local government area in the West by Ezza North and Ezza South local government areas and in the South by Cross River/Benue State. Abakaliki lies between longitude 7.30° and 8.30° East and latitudes 5.40° and 6.45° North. The main occupation of the people is farming.

Geopolitically, Abakaliki urban belongs to the south-east zone but lies entirely in the cross river plains. Ebonyi State population based on the 1991 population census was estimated at 1,523,000 people, which is about 2% of Nigeria’s total population of 88,992,220 people in 1991 [25]. About 60% of the total population of Ebonyi State is made up of rural dwellers, while the urban population is estimated at about 40%. Abakaliki urban has many markets where fish are sold, it include; Abakpa market, Ekeaba market, Nkwegu market, Kpirikpiri market, Nwokpo market, Rice mill market, Ishieke market and other markets within the Abakaliki municipality.

#### 3.2 Sampling Techniques

Multi-stage sampling technique was employed in sampling the respondents for the study. It is a sampling method in which the population is divided into a number of groups or primary stages from which samples are drawn; these are then divided into groups or secondary stages from which samples are drawn, and so on. It is a type of surveys conducted face to face, using multi stage sampling methodology. The sampling

was based on the number of the contact fish sellers within Abakaliki urban in Ebonyi state.

#### 3.2a Stage 1.

Seven major markets noted for fish markets within Abakaliki urban were selected by purposive sampling techniques.

#### 3.2b Stage 2.

Contact fish sellers in the selected market were identified and ten (10). Fish sellers from each market were randomly selected. A sample size of seventy (70) respondents were selected and interviewed.

#### 3.3 Data Collection

Primary data collection procedure was used for the study; the primary data was collected by the use of oral interview technique. The oral interviews technique was adopted because most of the fish sellers have low level of education and some did not attend school.

The following questions was asked and answered, the name of the market, factors affecting the fish sold, constraints and suggestion for the problems.

#### 3.4 Analytical Techniques

A number of analytical tools were employ in data analysis. Data was analyzed using descriptive statistics such as frequency and percentages. Specifically, while objective, (1) and (2) was analyzed using mean score in the form Likert scale.

#### 3.4.1 Model Specification

##### 3.4.1.1 Mean Score Model

Mean score and percentages were used to analyze objective (1), and mean score in form of a 5 point likert scale was adopted to analyze objectives 2 and 3 (2). Five- point likert scales (Dawes & John, 2008) was used in which the decision rule is 3.0 as shown below;

Mean score model

Decision point < 3.0 Reject

>3.0 Accept

Decision rule.  $X = \frac{\sum x}{n} = \frac{5+4+3+2+1}{5} = 3.0$

Where  $\bar{x}$  = mean

$\Sigma$  = summation

X = value likert

N = number of items

### 4. Results and Discussion

**Table 1:** The percentage distribution of the different species of fish sold in Abakaliki urban.

Titles	Category	Respondents	Percentage
Types of fishes sold	Mackerel ( <i>Trachurus japonicus</i> )	23	21.10%
	Sardine ( <i>Sardinella aurita</i> )	15	13.76%
	Scomber ( <i>Scomber Japonicus</i> )	31	28.44%
	Catfish ( <i>Clarias gariepinus</i> )	7	6.42%
	Mangala (Bargi mangala)	4	3.67%
	Stock fish ( <i>Gadus morhua</i> )	6	5.50%
	Bonga ( <i>Ethmalosa fimbriata</i> )	2	1.83%
	Electric fish ( <i>Malapterurus electricus</i> )	5	4.59%
	Spotted fish	16	14.68%
	<b>Total</b>		<b>109</b>
The form it is sold	Smoked	11	15.71%
	Fresh	34	48.57%
	Dry	16	22.86%
	Both	9	12.86%
<b>Total</b>		<b>70</b>	<b>100</b>

Sources of fish sold	Fishermen	12	17.14%
	Wholesaler	43	61.43%
	Retailer	15	21.43%
<b>Total</b>		<b>70</b>	<b>100</b>
Sources of fund	Personal savings	44	62.86%
	Friends and relations	16	22.86%
	Banks	3	4.29%
	Cooperatives	7	10.00%
<b>Total</b>		<b>70</b>	<b>100</b>

Source: Field survey 2013

**Types of fishes sold:** There are different varieties of fish sold within the study area, based on that different choices arise. The data generated revealed that major species of fish demanded mostly by the consumer are Scomber (*Scomber japonicus*) (28.44%), followed by mackerel (*Trachurus japonicus*) (21.10%). Other species are spotted fish (14.68%), sardine (*Sardinella aurita*) (13.76%), catfish (*Clarias gariepinus*) (6.42%).

Other species that are demanded though at low rate because of cost are stock fish (5.50%), Electric fish (*Malapterurus electricus*) (4.59%), Mangala (3.67%) and Bonga (*Ethmalosa fimbriata*) (1.83%).

**The form it is sold:** From Table 1, the data obtain shows that fish marketers within Abakaliki Urban sales their products in different form ranging from fresh, smoked, dry and those that sales both fresh and smoked fish. The result presented in Table 2 shows that majority of fish marketers within the study area sale fishes in fresh form (48.57%).

**Source of fish sold:** The data generated and presented in Table 2 reveal that there are three sources of fish found in Abakaliki market which includes the fisherman (17.14%), wholesaler (61.43%) and Retailer (21.43%). From the result it shows that majority of fish marketers in Abakaliki urban got their fish from wholesalers which is usually in a cold room.

**Source of Fund:** The data generated and presented in Table 1 shows that the major source of fund for fish marketers within the study area are from their personal savings (62.86%), it is few of them that source their fund from friends and relatives (22.86%), Banks (4.29%) and cooperatives (10.00%).

**4.1 Factors Affecting the Quality and Quantity of Fish Sold by Fish Marketers in Abakaliki Urban**

**Table 2:** Factors affecting the quality and quantity of species handled by fish marketers in Abakaliki market.

Factors	Response	Scale	Decision
Financial problem	Yes	3.8	Accepted
Consumers choice	Yes	3.7	Accepted
Inadequate fish supply	No	2.5	Rejected
Cost of fishes	Yes	3.3	Accepted
Poverty of the consumers	Yes	3.1	Accepted
Unavailability of fishes	No	2.7	Rejected
Lack of access to cold rooms	No	2.2	Rejected
Fear on the side of marketers	No	2.4	Rejected
Cost of transportation	Yes	3.0	Accepted
Inadequate storage facility	Yes	3.5	Accepted
Problems of smoking the fishes	Yes	3.5	Accepted
Epileptic power supply	Yes	3.0	Accepted
Cost of firewood	No	2.6	Rejected

Source: Field survey, 2014.

The analysis presented on the table 2 was based on 5-point likert scale in which the decision rule was 3.0 and any value below it was rejected. Based on the analysis in table 2, it was observed that financial problem 3.8 is the major factors affecting the quality and quantity of fish marketed in Abakaliki Urban.

Other major factors include consumer’s taste and preference (3.7), inadequate storage facility (3.5), problems of smoking the fishes (3.5) and cost of fishes (3.3). These are the main factors that determine the quality and quantity of fish that are sold in Abakaliki urban, other factors according to the respondents are poverty of the consumers (3.1), cost of transportation (3.0) and epileptic power supply affects the quality and quantity of fishes in the study area.

**4.2 Constraints of Fish Marketing in the Study Area**

The constraints of fish marketing were also analyzed using mean score. The analysis of result is presented in table 3.

**Table 3:** Constraints of fish marketing

Factors	Response	Scale	Decision
Problems of processing	Yes	3.9	Accepted
Consumers choices on fishes	Yes	3.2	Accepted
Smoked fish are more demanded	No	2.2	Rejected
Fresh fish are more demanded	No	2.2	Rejected
Dried fish are more demanded	No	2.0	Rejected
Inadequate smoking space in fish marketers stall or shop	Yes	3.7	Accepted
Inability to sell produce/goods quickly	Yes	3.0	Accepted
Price fluctuation	Yes	3.4	Accepted
Union activities	No	2.0	Rejected
Activities of government tax/agent	No	2.7	Rejected

Source: field survey, 2014.

The analysis presented on table 3 was based on 5-point likert scale in which the decision rule was 3.0 and any value below it was rejected. Based on the analysis in table 3, it was observed that the major constraints for smoked fish marketing is problem of processing (3.9) and inadequate smoking space in fish marketers stall or shop (3.7). Other constraints are general problem for marketers which include consumers choices on fishes (3.2) price fluctuation (3.4) and inability to sell goods/produce quickly (3.0) were the major challenges facing fish marketers in the study area.

**4.3 Recommended Solutions for Improving fish marketing in Abakaliki Urban**

A number of solutions were presented and analyzed in table 4. The fish marketers in the study area has made their suggestions and agreed with some solutions presented in table 4 below.

**Table 4:** Recommended solutions for improving fish marketing in Abakaliki Urban

Factors	Response	Scale	Decision
Government should provide more cold rooms/storage facilities	Yes	3.5	Accepted
Government should provide processing places/space	Yes	3.2	Accepted
There should be subsidy in price of fish by government	Yes	3.6	Accepted
Transportation facilities should be enhanced	Yes	3.5	Accepted

Source: Field survey, 2014.

The analysis presented on table 4 was based on 5-point likert scale in which the decision rule was 3.0 and any value below it was rejected. Based on the analysis in table 4, it was observed that solutions suggested was based on government coming to their aids for ease in fish marketing and all the solutions were accepted starting from subsidy in price of fish by government (3.6), provision of more cold rooms/storage facilities by government (3.5), enhancement of transportation facilities by government (3.5) and provision of processing space/places (3.2). Were the solution presented in table 4 and was accepted.

## 5. Conclusion and Recommendation

### 5.1 Conclusion

In conclusion, it has been observed that fish marketing in Abakaliki urban is a lucrative venture. Although, fishes are marketed in different forms either as fresh, smoked or dried fish. Marketers have lots of challenges, which the researcher has tried to proffer solutions for fishes as attested by the majority of the respondents.

### 5.2 Recommendations

Based on the research findings, the following policy recommendations are therefore proffered;

- Fish marketers should form a co-operative society to enable them obtain loan from financial institutions so as to expand their marketing activities. This is because in the process of data collection it was discovered that the majority of the fish marketers source their fund from their personal savings which is highly limited. Expanding the trading capital will enable the traders handle more bulk and consequently, more profit will be derived.
- Government and private organization should encourage fish marketers by building an organized market and effecting free trade within the study area.
- Government should provide more cold rooms to enable fish marketer get fish for sale easier. Government should provide processing place/space to enable those who want to engage in fish smoking to cope.
- There should be subsidy in price of fish by the government so that everybody will have access to fish, this is because majority of the consumers with in the study area are poor.
- Government should also provide transportation facilities and good infrastructural facilities within the study area to encourage the fish marketers.

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