



## **ANALYSIS OF FRESH FISH MARKETING IN NGASKI LOCAL GOVERNMENT AREA OF KEBBI STATE, NIGERIA**

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### **ABSTRACT**

*The study examined the marketing of fresh fish in Ngaski Local Government Area of Kebbi State, Nigeria. With the aid of a sampling frame, proportionate random sampling technique was used to select fish marketers. Thus, a total of one hundred and ten (110) fish marketers constitute the sample size for the study. Structured questionnaire was used to collect data for the respondents. Data analysis was carried out using descriptive statistics, marketing efficiency, marketing margin and T-test statistics. Result of the study revealed that about 26% of fresh fish marketers in the study area were within the age range of 20 to 30 years, fresh fish marketing in the study area is dominated by males (71.9%). Furthermore, about 83% of fresh fish marketers in the study area were married; majority (85.4%) of fresh fish marketers in the study area were literate. About 72% of fresh fish marketers in the study area had their monthly income ranging from ₦2, 000 to ₦20, 000. Also revealed from the result, 38.1% of fresh fish marketers in the study area had fresh fish marketing experience of 6 to 10 years. Result further showed that marketing margin of an average fresh fish marketer was ₦190 and the percentage marketing margin was 30%. The marketing efficiency of fresh fish in the study area was 0.582 and percentage marketing efficiency was 58%. Majority (63.64%) of fresh fish marketers buy fish directly from the fishermen and retailed it to consumers. On the problems faced by fresh fish marketers in the study area, 58.2% reported that fish spoilage was the major problem of fresh fish marketing. There was significant difference between the retail price and the river bank price of fresh fish in the study area. It could be concluded that fresh fish marketing in the study area was profitable and that fresh fish marketing in the study area was inefficient. It is therefore recommended that research institute such as national centre for agricultural mechanization should develop simple, affordable and easily adoptable equipment for fresh fish storage and preservation to avoid spoilage and loss.*

**Keywords:** Fresh fish, Marketing, Margin, Efficiency, Ngaski, Kebbi state.

## Contribution/ Originality

This study contributes to the existing literature in fish marketing and will provide empirical information to policy makers in the formulation of appropriate policies. It will also serve as a guide to practicing and prospective fish marketers and to researchers who may investigate further into the subject matter.

## 1. INTRODUCTION

Fish is an important source of protein in developing countries. However, it is highly perishable especially in the hot climate where unsanitary environment and poor handling practices worsen the situation (Ikeme, 2006). United Nations Population Fund (UNPF) (1993) posited that the demand for agricultural products is expected to reach unprecedented levels in the near future as the world population is estimated to increase considerably in about fifty years' time to about eleven billion with 98% of the future population growth likely to be in the developing countries. Potentials therefore exist for demand-supply imbalance. Stake-holders in many developing countries respond to this report by making efforts to overcome poverty, food insecurity and malnutrition.

Marketing of fresh fish passes through several market participants and exchange points before they reach the final consumers. The marketing system and structure is one of the main circumstances of socio economic condition of the local people and production system of any area (Alam *et al.*, 2010). It is a chain of different systems involved in the marketing from production to consumer with intra-linkages and inter-linkages. At various stages in the marketing chain, fish has to be packed and un-packed, loaded and un-loaded to meet consumer demand. Each handling cost will not amount so much but the sum total of all loading can be significant, depending on the length of chain (Ali *et al.*, 2008).

Subsequently, a greater difference in price paid between urban consumers at the end of the chain and river bank price at the beginning of the chain can lead to a greater or wider market margin between the producer and the final consumer. However, when the market margin is high, it may be used to argue that producers or consumers are being exploited. Nonetheless, high margin cannot be completely justified (Ali *et al.*, 2008).

Fish supply and marketing suffer so many obstacles ranging from shortage of supply, price fluctuation and spoilage in transit. Despite these, the people involved in the marketing of the fresh fish appear to be on the increase because of increase in the population and therefore, the demand tends to be high and increase in concentration implies more scope for the middlemen to exploit either the consumers by charging high or the producers by paying them lower price (Tomek and Robinson, 1981). Olukosi and Isitor (1990) opined that marketing margin is an important indicator of market performance. Usually, the middlemen performing the role of marketing are being accused of earning higher profits in the marketing system (Bryceson, 1993).

Analysis of fresh fish marketing is important considering the fact that fish and fish products contributed 6% to the gross domestic product (GDP) of Nigeria in 2006 (Areola, 2007). About 90% of fresh fish produced in Nigeria are sold in the local markets as a cheap source of protein to

the growing population. Fish also made up 40% of dietary protein consumption in the country. Nigerian fish market is dependent on season, ability of buyers to bargain and the concept of demand and supply. Fisheries development depends on improved production and processing technology and also on effective marketing system (Areola, 2007).

## 2. METHODOLOGY

Ngaski Local Government Area is one of the twenty one (21) Local Government Areas of Kebbi State. It is located in the extreme Southern part of the State on the shores of Kainji lake with its headquarter in Warrah town and covers an area of about two thousand six hundred and thirty three (2, 633 km<sup>2</sup>) square kilometres (National Population Commission (NPC), 2006). Ngaski LGA is bounded in the east by Auna LGA of Niger State, in the West by river Niger, in the South by Nasko LGA of Niger State and in the North by Rijau LGA of Niger State. It lies between latitude 10° 05'N and longitude 4° 10'E of the equator. The estimated population of the LGA is one hundred and twenty four thousand seven hundred and sixty six (124, 766) people (National Population Commission (NPC), 2006). The climatic condition of the study area falls within the guinea savannah zone. The area usually receives a rainfall ranging from 1200mm – 1500mm per annum with a mean temperature of 35°C which favours the cultivation of crops ranging from cereals, pulses and vegetables as well as animal production and fisheries resources (Zakari, 1999).

Ngaski LGA is made up of five (5) administrative districts, namely: Maginga, Makudi, Ngaski, Birnin Yauri and Kambuwa. Two villages were purposively selected, making a total of ten (10) villages. With the aid of a sampling frame obtained from fresh fish marketers association of the LGA, fresh fish marketers were proportionately selected. Thus, a total of one hundred and ten (110) fresh fish marketers constitute the sample size for the study. A structured questionnaire containing both open and close ended questions was utilized to collect primary data with the help of trained enumerators. Data analysis was carried out using descriptive statistics, marketing efficiency, marketing margin and T-test.

### 2.1. Models Specification

#### 2.1.1. Marketing Margin

The marketing margin is the difference between the value of a commodity when it is ready for sale from the farm and its value when it is bought by the final consumer (Asogwa and Okwoche, 2012).

$$MM = Pr - Pf \dots\dots\dots (1)$$

$$\%MM = Pr - Pf / Pr \times 100 / 1 \dots\dots\dots (2)$$

Where: MM = Marketing margin

Pr = Retail price

Pf = River bank Price

**2.1.2. Marketing Efficiency**

Marketing efficiency is the ratio of marketing cost to marketing margin. A higher value of this ratio indicates efficiency in the marketing system and lower value denotes inefficiency in the marketing system (Asogwa and Okwoche, 2012).

$$ME = MC/MM \dots\dots\dots (3)$$

$$\%ME = MM \times 100 \dots\dots\dots (4)$$

Where: ME = Marketing efficiency

MC = Marketing cost

MM = Marketing margin

If ME = 1, marketing system is efficient

If ME > 1, marketing system is highly efficient

If ME < 1, marketing system is not efficient

T-test - A statistical tool used for comparing the means of two samples (or treatments), even if they have different number of replicates. In simple terms, the t-test compares the actual difference between two means in relation to the variation in the data expressed as the standard deviation of the difference between the means (Spiegel, 1992).

$$t = \frac{\bar{X}_A - \bar{X}_B}{\sqrt{(SE_A)^2 + (SE_B)^2}} \dots\dots (5)$$

Where:

$\bar{X}_A$  = Mean of group A (Mean value of retail price).

$\bar{X}_B$  = Mean of group B (Mean value of river bank price).

SE= Standard Deviation

**3. RESULTS AND DISCUSSION**

**3.1. Socioeconomic Characteristics of Fresh Fish Marketers**

Table 1 showed the socio-economic profile of the fresh fish marketers in the study area. About 26% of fish marketers were within the age bracket of 20 to 30 years, 25.5% were within 31 to 40 years, 24.5% were within 41 to 50 years and 23.6% were within 51 and above years. Result also showed that 83.6% of fish marketers were married and 16% were single. About 79.1% of the fish marketers are male while 20.9% were females, majority (85.4%) of fish marketers had formal education while 14.6% of fish marketers in the study area had no formal education, implying that literacy level of fresh fish marketers in the area was fairly high. This is in line with the findings of Dongondaji and Baba (2010) who observed that high literacy level could have positive correlation with of agricultural technologies.

Result further revealed that 36.4% had their monthly income from fresh fish marketing alone, to be ₦2, 000 – ₦10, 000, also 36.4% had their monthly income to be ₦11, 000 – ₦20, 000, 18.2% had their monthly income to be ₦21, 000 – ₦30, 000 and 9% of fresh fish marketers had their

monthly income to be ₦31, 000 and above. However, a good proportion (38.1%) of fish marketers had experience in fresh fish marketing of 6 – 10 years, 35.5% had experience of 1 – 5 years and 26.4% had experience of 11 – 15 years, fresh fish marketing form the exclusive preserve of the people in their active age, thus they are fully aware of the interplay between the resources and the environment. This is supported by the findings of Ali *et al.* (2008) who observed that marketing experience is important in determining the profit levels of marketers, the more the experience, the more marketers understand the marketing system, condition, trends and prices.

**Table-1.** Socio-economic Characteristics of Fresh Fish Marketers

Variable	Frequency	Percentage
<b>Age (Years)</b>		
20 to 30	29	26.4
31 to 40	28	25.5
41 to 50	27	24.5
51 and above	26	23.6
<b>Total</b>	<b>110</b>	<b>100</b>
<b>Sex</b>		
Male	87	79.1
Female	23	20.9
<b>Total</b>	<b>110</b>	<b>100</b>
<b>Marital Status</b>		
Married	92	83.6
Single	18	16.4
<b>Total</b>	<b>110</b>	<b>100</b>
<b>Educational Background</b>		
No education	16	14.6
Primary education	29	26.4
Secondary education	38	34.5
Tertiary education	27	24.5
<b>Total</b>	<b>110</b>	<b>100</b>
<b>Income/Month (₦)</b>		
2,000 to 10, 000	40	36.4
11, 000 to 20, 000	40	36.4
21, 000 to 30, 000	20	18.2
31, 000 and above	10	9
<b>Total</b>	<b>110</b>	<b>100</b>
<b>Marketing Experience</b>		
1 to 5	39	35.5
6 to 10	42	38.1
11 to 15	29	26.4
<b>Total</b>	<b>110</b>	<b>100</b>

Source: Field Survey Data and Own Computation, (2014).

### 3.2. Marketing Efficiency of Fresh Fish

The marketing efficiency of fresh fish marketing in the study area is presented in Table 2. Result from Table 2 revealed a marketing efficiency of 0.582 which is less than 1, the marketing system of fresh fish in the study area is therefore not efficient. The percentage marketing

efficiency of fresh fish in the study area was 58.17%. This showed that for every ₦1.00 spent, ₦58 is gain. The above finding agreed with the findings of Onyemauwa (2012) which stated that marketing efficiency of fish was found to be 0.1245 indicating that fish marketing in Southeast Nigeria was not efficient.

**Table-2.** Marketing Efficiency of Fresh Fish

Variable	Value/Cost (₦)
Marketing Cost	465
Marketing Margin	1935
Marketing Efficiency	0.582
% Marketing Efficiency	58.17

Source: Field Survey Data and Own Computation, (2014).

### 3.3. Marketing Margin of Fresh Fish

Marketing margin is the difference between the value of a commodity when it is ready for sale from the farm and its value when it is finally bought by the consumer (Akosile, 2003). The marketing margin of fresh fish marketers in the study area is presented in Table 3. The marketing margin of an average fresh fish marketer per kg in the study area is ₦190 and the percentage marketing margin is 30.65%. The result showed that the river bank price is ₦430 per kg of fresh fish, while the retail price is ₦620 per kg. This implies that fresh fish marketing in the study area was profitable. Also, 100% retail price paid by the final consumer result in river bank-to-retail price spread (marketing margin) of 30%. In order words, an average fresh fish marketer in the study area earns a market margin (river bank-to-retail price spread) of 0.30 Naira for every 1 Naira retail price paid by the final consumer in the marketing process. This represents payments for all assembling, processing, transporting, and retailing charges added to fish product. The low level of the marketing margin of the marketers is largely attributable to the exploitative activities of the middlemen. This finding is in line with the findings of Madugu and Edward (2011) that marketing margin of fish was found to be 39%.

**Table-3.** Marketing Margin of Fresh Fish Marketers

Variable	Value (₦)
River bank price	430
Retail price	620
Marketing margin	190
% Marketing margin	30.65

Source: Field Survey Data and Own Computation, (2014).

### 3.4. Marketing Channels of Fresh Fish

Marketing is the means through which a product or commodity reaches the final consumer from the producer. The marketing channels of fresh fish in the study area is presented in Table 4. Result revealed that the marketing channels of fish in the study area was directly from fishermen to retailers 63.64%, 47.27% was through fishermen to wholesalers and 43.64% was through

fishermen to wholesalers to retailers. This is in conformity with findings of Madugu and Edward (2011) that majority (40.1%) fish marketers bought the fish product directly from the fishermen.

**Table-4.** Marketing Channels of Fresh Fish

Marketing Channels	Frequency	Percentage
Fishermen to retailers	70	63.64
Fishermen to wholesalers	52	47.27
Fishermen to wholesalers to retailers	48	43.64

Source: Field Survey Data and Own Computation, (2014). \*Multiple Responses.

### 3.5. Problems of Fresh Fish Marketing

Table 5 depict problems associated with fresh fish marketing in the study area. The most severe problem suffered by fish marketers in the study area was fish spoilage 58.2%, followed by lack of storage facilities 47.3%, price fluctuation 28.2%, lack of preservation facilities 20.9%, transportation problem 18.2% and inadequate capital 17.3%. This is contrary to the findings of Madugu and Edward (2011) that majority of fish marketers in Adamawa State face problem of inadequate capital as it was ranked first.

**Table-5.** Problems of Fresh Fish Marketing

Problems	Frequency*	Percentage
Lack of Preservation Facilities	23	20.9
Lack of Storage Facilities	52	47.3
Transportation Problem	20	18.2
Price Fluctuation	31	28.2
Fish Spoilage	64	58.2
Inadequate capital	19	17.3

Source: Field Survey Data and Own Computation, (2014). \*Multiple Responses.

### 3.6. Hypothesis Testing

There is no significant difference between retail price and river bank price of fresh fish. The result of the t-test in Table 6 rejects the null hypothesis that there is no significant difference between the retail price and river bank price of fish among the marketers. This suggests that there is significant difference between the retail price (6.10) and river bank price of fresh fish (4.13) with mean difference of (1.96) at 1% probability level.

**Table-6.** Mean Difference of Farm gate Price and Retail Price of Fresh Fish

Variables	Means	SD	Mean Difference
River bank price ( $X_1$ )	4.13	12	1.96
Retail price ( $X_2$ )	6.1	18.25	

Source: Field Survey Data and Computation by the Researcher, (2014).

#### 4. CONCLUSION

Based on the findings of the study, It could be concluded that marketing margin of an average marketer per kg was ₦190 implying that fish marketing in the study area was also profitable. Another conclusion drawn from this finding is that fresh fish marketing in the study area was inefficient and fish spoilage was the major problem of fish marketing in the study area.

#### 5. RECOMMENDATIONS

1. Marketing of fish can be a lucrative business in the study area if well -managed. There is a need for the formation of a strong cooperative society by marketers so as to ease some of the problem of price fluctuation.
2. Research institute such as national centre for agricultural mechanization should develop simple, affordable and easily adoptable equipment for fish storage and preservation to avoid spoilage and loss.

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