

COMPARATIVE ECONOMICS OF FRESH AND SMOKED FISH MARKETING IN SOME LOCAL GOVERNMENT AREAS IN ADAMAWA STATE, Nigeria.

*Onyia, L.U¹., Adebayo, E.F²., Adewuyi, K.O³., Ekwunife, E.G¹., Ochokwu, I.J.¹.

¹Department of Fisheries, ²Department of Agricultural Economics and Extension, Modibbo Adama University of Technology, Yola; ³Department of Agricultural Economics, Federal Polytechnic, Mubi, Adamawa State Nigeria.

*Correspondence author, email: luconyia@gmail.com Tel. +2348058047800

The study compared fresh fish and smoked fish marketing in Adamawa state. Primary data were collected with the aid of well-structured questionnaires from marketers in 13 major fish markets in seven local government area of Adamawa state. Findings from the study revealed that majority of the fish sellers were female (70%) and (64%) for smoked and fresh fish marketers respectively. Middle-aged class were (87%) and (86%) for fresh and smoked fish marketers respectively (70%) and (76%) were married. The result also indicate that (36%) and (29%) of the people involved in fish marketing had no formal education, (37%) and (43%) respectively had primary six education and below, while only (8%) and (7%) had school certificate requirement and post-secondary school education majority (79%) and (97%) of the fish sellers were engage in full time participation in marketing as their major occupation. The commonest fish in the surveyed markets include catfish, tilapia, snake head and Heterotis. Personal savings, support from friends and relations form the major source of capital invested on the business. The study revealed that with an average gross margin of N28, 209 and 33,099 and return to variable cost of N1.18 and N1.09 for fresh and smoked fish marketing respectively, fresh fish marketing was more profitable than smoked fish marketing. The constraints for fish marketing were highlighted in this work. It is recommended that loans be given to prospective fish marketers, provision of storage facilities, adequate space for selling of fish product to enhance the business among others

Key words: Fresh, smoked, fish, marketing, and gross margin.

INTRODUCTION

Nigeria with a projected population of 160 Million and has a projected fish demand of 2.1 million tonnes at 11.5kg per capital consumption [1]. About 41% of this demand can be met by domestic production leaving a supply gap of 59%. Hence the need to improve the production by more efficient fisheries management and the development of aquaculture and improvement in fish handling, processing, storage and distribution [2] in order to close the gap of 59% deficit. Fish is a major source of animal protein and essential food item in the diet of Nigerians being relatively cheaper than meat [3]. The fisheries sector is an important source of life and livelihoods for millions of people around the world. As the world's largest wild food harvest, fish provides a vital source of protein as well as spend –able income for many families in the developing world [4].

Around the world, women along coasts and rivers traditionally catch with nets, traps or by baiting or diving. In many parts of African (especially Nigeria and Egypt), women play vital role in fishing from rivers, lakes and wetlands either by direct or indirect involvement. The increasing human population, relatively cheap cost of fish and the desire to obtain a nutritionally balanced level of protein intake is the major cause of demand outstripping supply for fish in Nigeria. Nigeria with a projected population of 128.0 million and 12.5 per caput consumption will require 1.6million metric tonnes fish (Table I) in other to meet up the protein need of the population [5].

Fish marketing and distribution is an integral aspect of fish production because it is only when the fish gets to the final destination (consumers) that production can be complete. Marketing has been defined as all processes involved from the production of a commodity until it gets to the final consumer [6]. These processes ascertain that the right product is available at the right place, at the right price and at the right time to fully satisfy the consumer [7, 8].

Fish being highly perishable after harvest requires proper preservation and storage to increase the shelf life [9]. Major methods of fish preservation and processing have been identified as freezing, wood, smoking and drying. In most markets in some Local Governments in Adamawa State. In Nigeria, fish is sold to consumers as frozen or iced cured (smoked), sundried and as fresh either from a cultured pond or from the wild.

The research work is of paramount importance to the study area and it hopes to evaluate and compare the economic benefits of fresh and smoked fish enterprises in the study areas. The result will go a long way to justify the need to have more fish markets and encourage unemployed men women to enter into the business.

Table I: Projected fish demand and total domestic production from 2010-2015.

Year	Projected Population(M)	Per Caput Consumption (Kg)	Projected fish Demand(mt)	Total domestic fish production(mt)	Deficit (mt)
2010	151.2	12.5	1890000.00	634560.00	1255440.00
2011	155.5	12.5	1943750.00	652606.60	1292143.30
2012	160.0	12.5	2000000.00	671492.00	1328508.00
2013	164.4	12.5	2055000.00	689958.00	1365042.00
2014	169.1	12.5	2113750.00	709683.10	1404067.00
2015	174.0	12.5	2175000.00	730248.00	1444752.00

Source: FDF (2003). Presidential Forum Report on Fisheries Development Sub-sector

Materials and Methods

The Study Area

The study include seven local government areas of Adamawa States. They are Ngurore, Yola South, Yola North, Girei, Demsa, Fufore and Numan.

The data used for this study was through well-structured questionnaire of fresh and smoked fish marketers from markets in Adamawa State. These Local Government Areas have renowned fish markets and close to fish landing sites.

A total number of 286 questionnaires were purposively distributed among the fish marketers.

Method of data analysis

The data was analysed using descriptive statistics in terms of frequencies and percentages to summarise the socio-economic characteristics of the marketer. In addition, gross margin analysis was used to analyse the cost and returns to fish marketing.

Result and Discussion

The socio – economic characteristics of fish marketers is presented in the Table II. The result indicates that (36.4%) of the fresh fish sellers are males and (63.6%) are females. In smoked fish marketing, 30.1% and 69.9% are males and females respectively. The study reveal that more than half of the fish marketers were women. This is similar to a study conducted in Adamawa state found about (72%) women participation in fish marketing [10]. The distribution of respondents showed that majority of the fish marketers in the study area are in their active age (20-40years) this agreed with [11] who worked on smoked fish marketing in two local government areas of Adamawa state.

The marital status of the fresh fish marketers revealed (69.9%) for married, single (20.3%), separated (2.1%), Divorced (3.5%) and widowed (4.2%) respectively. While the marital status for smoked fish respondents showed (75.5%) for married marketers, single (16.8%), separated (3.5%), Divorced (2.8%), widowed (1.4%) respectively. This indicates that greater percentage of the marketers are married suggesting that the married women are responsible people in their family. It was also found that married women use their profits from fish marketing to meet family needs such as feeding, payment of children school fees and other domestic needs [12,10].

Table IIa: Distribution of Respondents According to Socio-economic Characteristics

SOCIO-ECONOMIC FACTORS		NUMBER OF RESPONDENTS			
		Fresh Fish Marketers		Smoked Fish Marketers	
		Frequency	Percentage	Frequency	Percentage
Gender	Male	53	36.4	43	30.07
	Female	90	63.6	100	69.93
	<i>Total</i>	<i>143</i>	<i>100</i>	<i>143</i>	<i>100</i>
Age groups	20-30	36	25.7	18	12.59
	31-40	54	37.76	59	41.26
	41-50	35	24.48	46	32.17
	51-60	16	11.19	16	11.9
	>60	2	1.40	4	2.80
	<i>Total</i>	<i>143</i>	<i>100</i>	<i>143</i>	<i>100</i>
Marital status	Single	29	20.28	24	16.78
	Married	100	69.93	108	75.52
	Seperated	3	2.10	5	3.50
	Divorced	5	3.50	4	2.80
	Widowed	6	4.20	2	1.40
	<i>Total</i>	<i>143</i>	<i>100</i>	<i>143</i>	<i>100</i>

The results (Table IIb) also showed that about (36.4%) and (28.7%) of the fresh fish and smoked fish marketers had no formal education. This result hold that majority of the fish sellers (88%) and (81%) are literate and could communicate in English language. Also of interest is that about (79%) and (97%) which constitute the majority of the fresh and smoked fish population respectively were full time marketers. This implies that they depend on the business for livelihood. This agree with the work done by [12], that for women in particular, fish processing and trading provide very important livelihood support in West and South Africa. This is because small scale processing and/or trading a local markets require relatively few investments, having generally low operational costs.

Table IIb: Distribution of Respondents According to Socio-economic Characteristics

SOCIO-ECONOMIC FACTORS		NUMBER OF RESPONDENTS			
		Fresh Fish Marketers		Smoked Fish Marketers	
		Frequency	Percentage	Frequency	Percentage
Level of education	Non formal	52	36.36	41	28.67
	Primary	53	47.09	62	48.35
	Secondary	34	23.78	36	25.16
	Post secondary	4	2.80	4	2.80
	<i>Total</i>	<i>143</i>	<i>100</i>	<i>143</i>	<i>100</i>
Nature of business	Full time	113	79.02	138	96.50
	Part time	30	20.98	5	3.50
	<i>Total</i>	<i>143</i>	<i>100</i>	<i>143</i>	<i>100</i>

Types of Fresh and Smoked Fish

As indicated in Figure I, the predominant fresh fish in the study area are *Tilapia* (23.7%), *Clarias* (23.5%), *Snake head* (21.5%) and *Heterotis* (20.5%), while the commonest smoked fish are *Tilapia* (25.3%), *Clarias* (27.5%), *Snake head* (15.5%) and *Heterotis* (19.9%). It could be inferred that the dominant species of the fresh and smoked fish in the study area are between *Clarias* and *Tilapia* which are more available than the others. However, smoked *Clarias* and *Tilapia* are the choice fish in Nigerian markets.

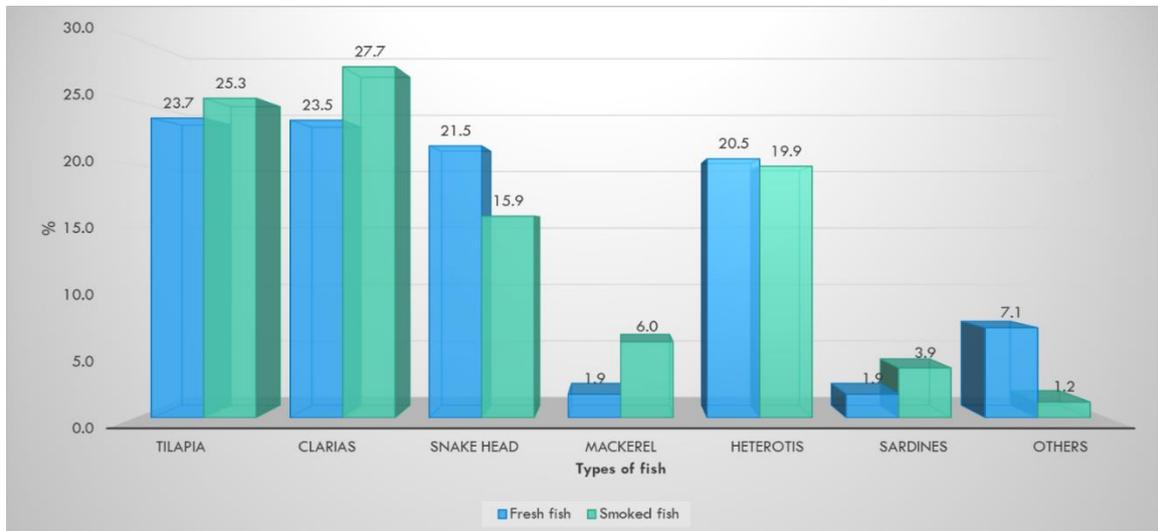


Figure I: Types of fresh and smoked fish

From Figure II, personal savings formed the bulk of capital available for the fish sellers as 54.6% and 46.9% represent the percentages of fresh and smoked fish respectively who gain their investment capital through personal savings. Friends and a relative as a capital source gives 34.3 for fresh fish sellers and 45.5% for smoked fish marketers as shown in Table 4. Other forms of capital claimed are from banks (2.1%), daily contribution (7.7%) and others (1.4%) shown in the table for fresh fish marketers while that of smoked fish revealed (0.7%) for banks, daily contribution (5.6%) and money lenders (1.4%). From the result, it can be deduced that the financial support from the government for investment in the fish marketing business is very limited and often a constraint to many prospective fish marketers.

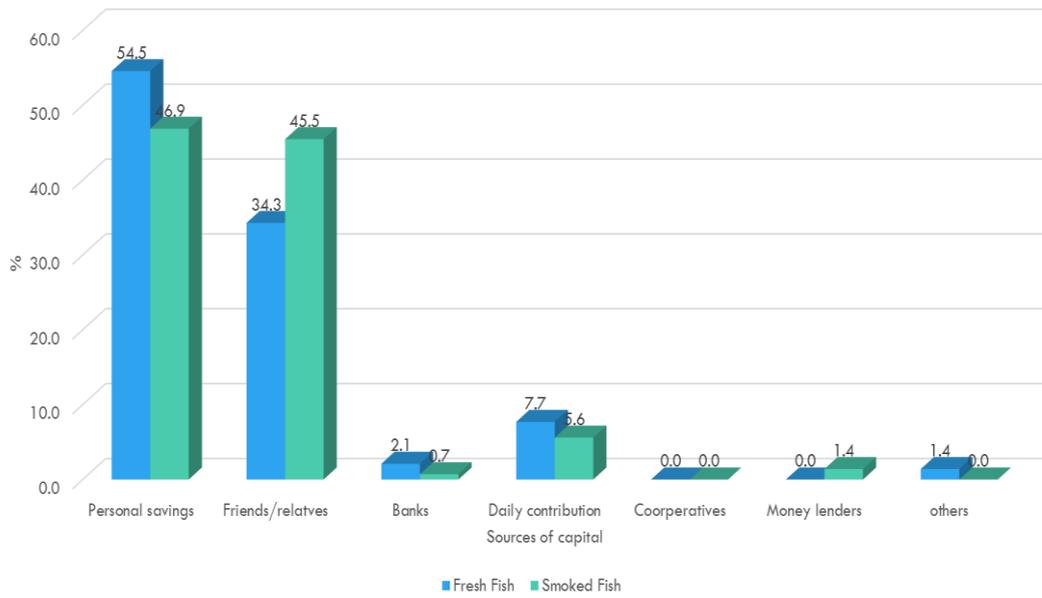


Figure II: Sources of capital for fresh and smoked fish marketers.

The constraints to efficiency and profitability of the fish selling business (Table III) for both fresh and smoked fish marketing were finance, inadequate fish supply, inadequate demand and lack of comfortable space to sell their products. The problems of demand and supply of fish in riverine and non-riverine communities may be affected by abundance and unavailability of fish products [13]. In spite of these constraints, the fish marketers attested that the demand for fresh fish and smoked fish were high in the area.

However, consumer preference was the reason why fish marketers preferred to sell fresh fish or smoked fish. More so, inability to sell the quantity of fresh fish purchased was another factor that influenced fish smoking. The only way to prevent post-harvest losses which has been estimated at 20-50% in tropical countries [14] was to simply smoke the fish.

Table III: Factors Limiting Business Operation of Respondents

Variables	Fresh Fish		Smoked Fish	
	frequency	Percentage	Frequency	Percentage
Inadequate fish supply	24	16.78	26	18.18
Finance	78	54.55	81	56.64
Inadequate demand	20	13.99	32	22.38
Lack of comfortable space to sale	13	9.09	0	0
Others	8	5.59	4	2.80
Total	143	100	143	100

The Gross Margin Analysis

The gross margin of an enterprise is the difference between the total values of production (Gross Income) and the total valuable costs [15]. It is very useful in planning tool in situations where fixed capital is a negligible portion of an enterprise [16]. It is very easy to compute and interpret, it helps the manager to critically examine the variable cost components and it is used in the choice of enterprises.

It is normally used to study the performance of an enterprise that is the positive components of a firm to obtain information about the business strength or weakness [17].

The gross margin of fresh fish marketers was estimated as shown in Table IV, it shows a total gross income of ₦26, 181, 000 and the total variable cost is ₦22, 203, 450. The average gross margin per marketer per month is ₦28, 209.

The gross margin of smoked fish marketers was estimated at total gross income was ₦57, 705, 050 while the total variable cost is ₦50, 004, 856 and average gross margin per marketer per month is ₦33, 099.

This shows that fresh and smoked fish marketing in the study area are quite profitable. The return to variable cost in fresh fish marketing is 1.18 which means that for each investment of ₦1.0 variable cost in the business a seller gets ₦1.18 in return in fresh fish marketing, while the return to variable cost of smoked fish is ₦1.09 which also means that for each investment of ₦1 variable cost in the business, a seller gets ₦1.09 in return. Thus both ventures are profitable, although fresh fish marketing was discovered to be more profitable than the smoked fish marketing. This cannot be unconnected to the cost of smoking equipment and time taking to smoke the fish.

Table IV: Economic Benefits of fresh and smoked fish marketing

FACTORS	Fresh Fish Marketing	Smoked Fish Marketing
Total Gross Income	₦26,181,000	₦54,705,050
Total Variable Cost (TVC)	₦22,203,450	₦50,004,855
Gross Margin	₦3,977,550	₦4,700,194
Return to variable cost	₦1.18	₦1.09
Total number of respondents	143	142

Conclusion

An economic analysis of fresh and smoked fish marketing has been carried out using some selected local government areas in Adamawa state as a case study.

The findings from the study showed that both fresh and smoked fish marketing were profitable, though fresh fish marketing had better profit margin. This could be due to the level of intensive work involved in the processing of fish. It also showed that majority of the fish sellers were women with little or no education.

Consumers' preference prove to be the major factor influencing fish smoking. The demand for fish is relatively high in the area with higher percentage of the smoked fish marketers indicating very high demand for their products. The work also show that majority of the fish marketers are in their active work life and can withstand the rigours associated with the trade.

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