**ECONOMIC ANALYSIS OF FRESH FISH MARKETING IN KEDE TIFIN DISTRICT OF MOKWA LOCAL GOVERNMENT AREA, NIGER STATE, NIGERIA.**

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**Abstract**

*The study examined the Economic analysis of fresh fish marketing in Kede-Tifin District of Mokwa Local Government Area of Niger State, Nigeria. Multi-stage sampling technique was used to draw up 200 respondents for the survey and questionnaire were used to collect information from the respondents, however only 120 questionnaires were found usable at the end of the survey and were used for the data analysis. Data were analyzed using descriptive statistics, farm budgeting analysis, Gini coefficient, marketing margin analysis etc. The result of the analysis revealed that most players in the industry (91.67%) were males who were mostly married (69.17%) and had modern education. The result of the Gini-coefficient (0.870) shows that the market structure of fresh fish is inefficient, though the venture is highly profitable. The marketers also face a lot of constraints in their activities, but it was recommended that marketers be provided with credit facilities, infrastructures, storage and processing facilities.*

**Keywords:** Economic Analysis, Fresh Fish, Marketing and Kede-Tifin

**Introduction**

Fish is considered to be one of the most important and cheapest sources of animal protein (Flake and Nzeka, 2007), and only egg protein can “rival” fish protein (Ndanitsa, 1994). Fish represent a significant proportion of animal protein in the diets of many, in developing countries, including Nigeria. Globally, fish production has grown steadily in the last five (5) decades with food fish supply increasing at an average annual rate of 3.2 percent (FAO, 2014). According to FAO (2012), fish in the world provides about 3.0 billion people with almost 20 percent of their intake of animal protein and 4.3 billion people with about 15 per cent of such protein. Similarly, with the increasing awareness of the positive effects of fish consumption on health and well-being, the importance of fisheries in the food sector is certain to grow further. Equally, the sector will also continue to contribute to income generation and livelihood of significant portions of the global population, mostly the rural poor.

According to World Fish Centre, Africans rely on fish for an average of 22 per cent of their consumption of animal protein. Fish also provides essential vitamins, minerals, fatty acids and other nutrients crucial to a healthy diet. However, fish is a highly perishable biomaterial; fish quality deteriorates rapidly after harvest, just as many other dead tissues, and producers/marketers either “sale it on time or smell it”, as the potential keeping time is shortened. 20 – 50% of fish are lost to post-harvest (Eyo, 2001). This colossal waste has been attributed to poor and underdeveloped post-harvest processing, preservation and marketing practices (Oyero *et al*, 2012). This has also, resulted to fish becoming expensive source of animal protein contrary to the global belief of its cheapness.

Moreoften than not, an increase in fish productivity depends heavily on its marketability so as to improve its vital role in a national economy. This is because an efficient market does not only link sellers and buyers in reaching to current situations in supply and demand, but rather has a dynamic role to play in stimulating consumption of outputs which are essential elements of economic development (Haruna *et al*; 2012).

According to the United States Agency for International Development (USAID) (2014), fish consumption account for about 35% of animal protein in Nigeria. The agency observed that fish farming (aquaculture) is a vibrant and commercial sector in Nigeria, ripe with investment and employment opportunities. Recent data shows that Nigeria produced just over 600,000 metric tonnes of fish in 2007. Consumer-demand on the other hand, was met only in part by import of 740,000 metric tonnes that same year (USAID, 2014). In a similar view, Lawal and Idega (2004), earlier observed that the fishery sub-sector also provides employment opportunities, to many Nigerians including those involved in direct fishing, processing and marketing. Marketing of fish is not usually on the basis of fishermen – consumer. The prices of fish change as it passes through middlemen such that by the time it reaches the final consumers, it has become expensive.

Fish marketing improves the rural economy through provision of additional source of income, offering employment opportunities, development of infrastructural facilities and improving the nutritional and standard of living of both urban and rural people. Against the backdrop of the critical roles of the fish sub-sector play and its potentials in resolving the imminent food crisis, this study was designed to focus on the marketing of fresh fish products n Kede Tifin district of Mokwa Local Government Area (LGA) of Niger State, Nigeria. Similarly, the study was also carried out to identify the socioeconomic characteristics of the marketers, determine the costs and returns as well as their profitability.

**Methodology**

**Study Area**

This study was conducted in Kede-Tifin District of Mokwa LGA of Niger State, Nigeria. Wuya Kede is the District headquarters, while Mokwa is the LGA headquarters. The LGA has a population figure of 242,858 people (N.P.C, 2006). This study was however, restricted to Kede Tifin District because fishing or generally fisheries is the principal occupation of the people of the community, hence called “kedes”; meaning “fishermen”. The District is made up of the following five (5) fishing communities (commonly known as fishing village areas) namely, Wuya Kede, Ketso, Kpambo; Kpachita, and Gbara..

**Sampling Technique and Method of Data Collection**

Multi-stage sampling procedure was used for this study. The first stage involves the purposive sampling of Kede-Tifin district of the state, as fishing is the principal occupation of more than 90 percent of the inhabitants of the area. The second stage involves the selection of 5 fishing communities, followed by the selection of 4 fishing locations, and finally the selection of 10 fresh fish marketers from the area, to give a sample size of 200 respondents, from whom relevant information were elicited. However, only 120 questionnaire were returned and found suitable for consideration in the analysis.

Data were collected on socio-economic characteristics of the sample marketers, e.g age, sex, income from sales of fresh fish, marital status, household size, membership of cooperative societies and educational status; price of fresh fish marketed, quality of fresh fish bought and sold (especially at the landing sites), frequency of purchase; marketing constraints, transportation costs; marketing information on consumer preferences, e.g cultured or wild fish. Data collected commenced in August, 2018 and lasted till August, 2019. Data generated were based on several market survey on fortnightly basis (or market days during the survey period). Data analysis was carried out in December, 2019.

**Method of Data Analysis**

**Descriptive Statistics:** The descriptive analytical tools such as percentages, tabulations, frequency distribution, means/averages, cross tabulations etc. were employed to describe the socio-economic characteristics of the respondents involved in fresh fish marketing, describe the consumer preference and to identify the constraints associated with fresh fish marketing.

**Market Structure Analysis**

Gini coefficient was used to examine the market structure in the area. It is a measure of statistical dispersion most prominently used as a measure of inequality of wealth or product distribution among the key players in the industry (Ndanitsa, 1994 Ndanitsa *et al* and Wikipedia, 2013). The model specification as adopted by Iheanacho (2005), Shuaibu (2015), is expressed as follows:

GC = 1 - $\sum\_{}^{}X\_{ab} Y\_{ab}$ …………………………………………………………………………… (1)

Where:

GC = Gini Coefficient

X = Proportion of Sellers

Y = Cumulative Proportion of Sales

$\sum\_{}^{}$ = Summation sign and

1 = Constant or Unity

The Gini Coefficient varies from 0 to 1. If the coefficient is equal to Zero (0), it implies perfect equality in the distribution, while if the value is one (1), it corresponds to perfect inequality. According to Ojo (2012), the closer the Gini coefficient is to zero, the greater the degree of equality, the lower the level of concentration and the more competitive the markets are. Further, as the Gini coefficient approaches unity, the degree of inequality increases. Ojo (2012) also submitted that, the higher the level of concentration, the more imperfect the markets are, and the lower the efficiency of such markets.

**Farm Budgeting Technique:** Net Farm Income (NFI) model or sometimes known as Costs and Returns Analysis is one of the Farm Budgeting tools that were employed to measure ethe level of inputs realized. The tool was used to ascertain the profitability of fresh fish marketing in the study area. In analysis, when the gross income realized from the sale of fresh fish is greater than the cost, profit is made whereas, loss is made when it is the opposite. Net income is the difference between gross income realized and total costs of marketing. Notationally, Net Income is specified as follows.

NI = GI – TVC – TFC………………………………………………………………. (2)

NI = $\sum\_{k=1}^{m}Pj Qj- \sum\_{k=1}^{m}PK QK-TFC$……………………………………………. (3)

TC = TFC – TVC

Where:

NI = Net Income,

GI = Gross Income,

TVC = Total Variable Cost,

TFC = Total Fixed Cost,

TC = Total Cost,

$\sum\_{}^{}$ = Summation Sign,

Pj = Per Unit price of jth output of fresh fish,

Qj = Quantity of jth output of fresh fish,

Pk = Per Unit Price of Kth input,

Qk = Quantity of Kth unit of Input,

**Marketing Margin (MM) Analysis:** This is a measure of market performance. MM is the difference between the price paid by the consumer and that received by the producers (Ali, *et al*, 2008). Gross marketing margin of Fish Marketers is determined by the difference between the cost price of fish and the selling price (Anuebunwa, 2006). This is expressed as:

Marketing Margin = $\frac{Selling price-Purchase Price}{Selling Price} x 100$………………………………………… (4)

According to Olukosi *et al* (2005), a larger variation between the marketing margins of participants indicates a wide variation along the chain while a participant with higher marketing margin, is said to have a larger share of the marketing benefits.

**Marketing Efficiency (ME):** In addition to Marketing Margin Computation, Marketing Efficiency was used to determine the performance of fresh fish marketers in the study area. It is the maximization of the ratio of output to input. The marketing inputs are those costs incurred during the marketing of fresh fish, such as transport costs, commission, taxes, labour used, packaging, processing and storage financing. On the other hand, output is the value added to the commodity as it passes through the marketing system: Accordingly, ME of fresh fish marketing adopted from Inuwa *et al* (2011) is

Marketing efficiency (ME) = $\frac{Value added by marketing}{Cost of Marketing Services} x 100$ ………………………………. (5)

Value added by marketing (VA) = CPT - CPU ……………………………………………… (6)

Where:

VA = Value added

CPF = Cost of Purchasing Fresh Fish plus storage cost/commission charges;

CPU = Cost of Purchasing Fresh Fish

**Results and Discussion**

**Socio-economic characteristics of fresh fish markers**

The Socio-economic characteristics of fresh fish marketers is presented in Table 1. Table 1 shows that, although both men and women were actively involved in fresh fish marketing in the study area, but men were more dominant in numbers (91.67%). This is an indication that fresh fish marketing in the study area was purely men’s business, and it is an indication of serious gender inequality in the business, which might be due to some socio-cultural values of inhabitants. A number socio-cultural factors restricted women to access to water resources; low technical know-how and lack of credit facilities (especially Marketing loans) limit full participation of women in the small-scale fisheries sector (Williams, 2002). This finding is in disagreement with the findings of Lawal and Idega (2004), on the analysis of fish marketing, in

**Table 1:** Socio-Economic Characteristics of Fresh Fish Marketers (N=120)

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Variable**  | **Frequency (N=120)** | **Percentage** | **Minimum**  | **Maximum**  | **Mean**  | **S.D** |
| **Age (Years)**$\leq $ 2021 – 40 41 – 60 Total  | 138027120 | 10.8366.6722.5100.00 | 17.00 | 60.00 | 33.25 | 10.79 |
| **Gender:**Male Female Total  | 11010120 | 91.678.33100.00 | 0.00 | 1.00 | 0.91 | 0.23 |
| **Marital Status**Single Married Total  | 3783120 | 30.8369.17100.00 | 1.00 | 2.00 | 1.73 | 0.44 |
| **Educational Status** No formal Education Primary Education Secondary EducationTertiary Education Total  | 3826497120 | 31.6721.6740.835.83100.00 | 0.00 | 14.00 | 3.88 | 2.16 |
| **Household Size**No Household Size1 – 10 11 – 2021 – 30> 30Total  | 35622021120 | 29.1751.6716.661.660.83100.00 | 0.00 | 32.00 | 5.88 | 6.75 |
| **Marketing Experiences (years)**1 – 20 21 – 4041 – 60 Total  | 77358120 | 64.1729.176.66100.00 | 1.00 | 48.00 | 16.82 | 11.15 |
| **Cooperative Membership Cooperativeness (Years)**Not Belong to Any  | 24 | 20.00 |  |  |  |  |
| Belong Total  | 96120 | 80.00100.00 | 0.00 | 1.00 | 0.86 | 0.34 |

Source: Field Survey Data, 2019

Note: SD = Standard Deviation

Benue State, Nigeria where the author revealed that majority (90%) of the marketers were women. The finding was also in disagreement with the report of Yisa *et al* (2012) in their study on socio-economic impacts of selected processing methods among Artisanal fish processors around river Gbako, Niger State, Nigeria. The study revealed that most fish processors (a component of Fish marketing) were Female (87.50%). However, the finding of this study corroborated with Ali *et al* (2008) on the Economic analysis of fresh fish marketing in Maiduguri, Gani Boru and Kachallari Alau Dam landing sites of North-Eastern Nigeria, where it was revealed that majority (81.67%) of the respondents in the study area were male. Similarly, the study was also in line with Shuaibu (2015) in his study of Economics of fresh fish marketing in selected LGAs of Niger State, which revealed that most of the marketers (95%) were males. This gender peculiarity is an important dimension at the policy front, especially of the developing economies, like Nigeria.

The age of the marketers is a critical factor to the success of the business, since it determines whether the marketer is a beneficiary of the experience of an older generation, or an innovative marketer that base his/her decisions on the risk banking attitude of younger marketers. In addition, sometimes credit may be given to younger farmers/entrepreneurs as a result of government programme for youth empowerment in agricultural sector (Lawal, 2012). Table 1 also shows the age distribution of fresh fish marketers in the study area; majority (66.67%), of the respondents were of middle age and above. The mean age was 33.25 years. This findings agrees with Yisa *et al* (2012), Ndanitsa *et al* (2013) and Shuaibu (2015) who in their separate studies on fish marketing revealed that the mean average of the marketers were 34.3 years, 37.53 years and 34.22 years respectively. The implication of this finding however, is that, the marketers were within their economically active, productive and energetic age which could translate their abundant stamina to withstand pressure and ability to accept innovations. According to FAO (2002), Eze (2002) and Asumugha (2005), the age of the decision maker is an important factor influencing change and enhancing adoption of improved agricultural production technologies.

Majority of the fish marketers in the study area were married (69.17%), as revealed in Table 1. Marital status may become an important factor specially in traditional agriculture when farm labour is in short supply. This is because married entrepreneurs with large family size may have ready supply of family labour to work. Also, marital status of fish marketers is very paramount to the business especially when it concerns issues of decency. Married people are considered to be highly responsible, given the consumer more confidence and trust against the marketers that are not married. The result of the finding is an indication that there will be high sense of responsibility on the part of the marketers, and is in line with the findings of Kainga and Adeyamo (2012) on the socio-economic characteristics of Fish marketers in Yenagoa LGA of Bayelsa State, Nigeria, where the author revealed that majority of the respondents (68.9%) were married. Salihu (2012) in his study of Economics of Fresh Fish marketing in Kontagora LGA, Niger State, Nigeria, reported that 85% of the marketers of fresh fish products in the area were married. Moreoften than not, Ndanitsa *et al* (2013), Yisa *et al* (2012) and Shuaibu (2015) in their separate studies all reported that most of the marketers of fresh fish products were married.

Table 1 also revealed that 68.33% of the fresh fish marketers in the study area had modern education and only 31.67% had no formal education. The mean level of education for the markers sampled was secondary education. Lack of modern education among members of the fishing communities in West Africa posed some constraints on sustainability in Artisanal fisheries sub-sector. According to Lawal and Idega (2004), the level of education attained by the marketer determines to a large extent, the strategies he/she may adopt in solving marketing problems and adopt innovations without difficulties and consequently maximize profit, which are all achieved through better use of management information. The findings of this study is in line with those of Omolanwa (2011), on the marketing structure of fresh fish at Olomore fresh water market in Abeokuta, Ogun State, Nigeria; Ndanitsa *et al* (2013), on Cost/Returns of *Lates* farming in Kede Tifin District of Niger State, etc. All the authors reported that most fresh fish marketers in their study area had modern education, which is due to primary, secondary or tertiary education stiches.

The distribution of fresh fish marketers in the study area according to house hold size is also presented in Table 1. The analysis of the result revealed that most of the respondents (51.67%) had household sizes of 1 – 10 people, and the mean household size is approximately 6 people in a household. This finding corroborates with that of Shuaibu (2015) who in a similar study revealed an average household size of 6 people. This is very important especially when there is inadequate supply of manpower or when hired labour is in short supply. Marketers with a large household size will more likely make up for the short fall by using family labour, as it is cheaper and readily available, and it help to reduce expenses on hired labour in operation (Eboh, 1995). These finding almost agreed with the findings of Baba and Etuk (1991), Baba and wando (1998), Ndanitsa (2005) and Tsoho (2005). However, Baba and wando (1998) and Baba and Etuk (1991) explained that the implication of large household sizes is that it tends to draw more on family income, so that only a meager sum is saved and invested eventually on business.

The number of years spent in fresh fish marketing among the marketers in the study area ranged between 1-48 years, with an average of approximately 17 years. The distribution indicates that fresh fish marketers in the study area were relatively old in the business. Therefore, they ‘ve acquired adequate experience overtime, through learning by doing. Experience enable entrepreneurs get realistic target and to view the enterprise more objectively. It affects decision, the marketing process and the ability of the entrepreneur to handle deficit financing. Osuntogun (2000) noted that several factors are known to affect the credit needs of entrepreneur, prominent among these factors is to their past experience.

**Consumer preferences of fresh fish in the study area**

Consumers in the study area usually buy fresh fish at the fishermen landing sites or at fresh fish markets. Table 2 shows the distribution of consumers of fresh fish products in the study area based on their preferences.

**Table 2:** Consumer Choice of Fresh Fish in the study area markets

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Fish type** | **Wuya Kede** | **Ketso**  | **Kpambo**  | **Kpachita**  | **Total %** |
| Cultured Fish  | 00(0) | 02(10) | 19(47.5) | 22(55) | 43(35.83) |
| Artisanal  | 20(100) | 18(90) | 21(52.5) | 15(37.5) | 74(61.67) |
| No Comment  | 00(0) | 00(0) | 00(0) | 03(7.5) | 03(2.50) |
| Total  | 20(100) | 20(100) | 40(100) | 40(100) | 120(100) |

 Source: Field survey data, 2019

Figures in parenthesis represents percentages of respondents for individual markets.

Determinants of choices made by the consumers of fresh fish in all the markets surveyed depends on the availability of the fish in the market, the purpose/place of usage and ease of access to the fish market. Table 2 revealed that all the consumers in Wuya Kede Market preferred artisanal fish to cultured fish (100%). This was due to the availability of the fish in the market, acceptability and ease of access to the market, as well as the socio-cultural activities in the study area. It must be noted that Wuya Kede is located along Bida – Ilorin road at the bank of river Kaduna. However, the implication of this finding is that, the effort of government and non-governmental organizations to encourage aquaculture farming to boost fresh fish production in the study area and the entire country is defeated. The result of this study is in disagreement with the study of Omolanwa (2011) on the marketing structure of fresh fish at Olomore fresh water fish market in Abeokuta, Ogun State, where the overwhelming majority (77.1%) of the marketers purchased cultured fish. The result is also in disagreement with the findings of Ndanitsa, *et al* (2013) who reported that fish farming especially *Lates* is an overwhelming enterprise in Kede Tifin District Headquarters (Wuya Kede). The result in Table 2 showed that in Ketso market however, majority (90%) of the consumers preferred artisanal and 10% preferred cultured fish. The choice of the larger population of the respondents could also be attributed to the nearness of Ketso locality been surrounded by river Niger and its tributaries. This study is in line with Ndanitsa (2013) who revealed that most fishing activities in the area are carried out by artisanal fishermen and that fish farming is not a popular activity in the area.

Furthermore, the results at Kpambo market revealed that 52.5% of the respondents preferred fish caught from artisal fishing while 47.5% preferred cultured fish. The increasing number of consumer’s preference to cultured fish could be attributed to the fact that Kpambo is located far away from any river but the people are equally fisher folks. Moreso, the inhabitants are eco-friendly fishery and livestock for augmenting farm income and sustainable livelihoods. Moreoften than not, the results in Table 2 also revealed that the consumers in Kpachita market preferred cultured fish (55%) to artisanal fish (37.5%). This could be as a result of excessive demand for fresh fish in the study area and the nearness of the locality to Jebba which is urban and full of economic activities. The findings of this study is in line with the findigns of Salihu (2011) on his study on the economic analysis of fresh fish marketing in Kontagora LGA of Niger State, Nigeria, where the author revealed that most of the respondents (58.8%) preferred cultured fish to artisanal fish.

Meanwhile, reasons advanced by the respondents for their preference/choice to fresh fish in the area include taste, body size, freshness, medicinal benefit, meat quality, to mention but a few. This reasons advanced are revealed in Table 3.

**Table 3:** Consumers’ reasons for choice of fish in the study area.

|  |  |  |
| --- | --- | --- |
| **Reasons for Preference**  | **Frequency**  | **Percentage**  |
| Taste  | 71 | 59.17 |
| Freshness  | 33 | 27.50 |
| Meat quality  | 8 | 6.67 |
| Medicinal benefit  | 5 | 4.16 |
| Body size  | 3 | 2.50 |
| Total  | 120 | 100.00 |

 Source: Field survey data, 2019

Table 3 revealed that most of the respondents (59.17%) preferred artisanal fish to cultured fish, and reason advanced for this preference was that the former taste better than the later.

**Market structure of fish marketers**

As stated earlier, market structure is the measure of activities or the competitiveness of a particular market, which is a measure of statistical dispersion. Table 4 reveals the measure of this statistical dispersion. The computed Gini coefficient was 0.87. These results indicated a high level of concentration and consequently high inefficiency in the market structure for fresh fish in the study area.

**Table 4:** Market Structure: Gini-coefficient for fresh fish marketers in the study area.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Income from Sales (N)** | **Number of sellers frequency** | **Proportion of sellers (X)** | **Cumulative proportion of sellers** | **Total sales (N)** | **Proportion of sales** | **Cumulative proportion of sales (Y)** | $$\sum\_{}^{}XY$$ |
| 1 – 400,000 | 89 | 0.742 | 0.742 | 114511 | 0.022 | 0.022 | 0.016 |
| 400,001-800,000 | 11 | 0.092 | 0.834 | 612690 | 0.117 | 0.139 | 0.013 |
| 800,001-1,200,000 | 8 | 0.067 | 0.901 | 1096250 | 0.209 | 0.348 | 0.023 |
| 1,200,001-1,600,000 | 7 | 0.058 | 0.959 | 1464000 | 0.280 | 0.628 | 0.036 |
| 1,600,001-2,000,000 | 5 | 0.042 | 1.000 | 1950000 | 0.372 | 1.000 | 0.041 |
| Total  | 120 |  |  | 5237451 |  |  |  |

**Source:** Field survey Data, 2019

Gini – coefficient = 1 - $\sum\_{}^{}ZY=1-0.130$ = 0.870.

**Performance of fish marketing in the study area**

As earlier stated, costs and returns analysis, and marketing margin were used to analyze the performance of fish marketers in the study area. The cost and returns and the Marketing Margin for all the sampled markets were computed, and the results revealed in Table 5.

The results in Table 5 revealed that marketing tax, Marketing margin was analyzed using the marketing margin (MM) equation; (4)

The marketing margin for all the sampled markets were calculated as follows:

Marketing margin $= \frac{25455000-10,031,750}{25455000} x 100$

Marketing margin = 39.4097

Producer Marketing share = 60.5903

**Marketing Efficiency**

The efficiency of fresh fish marketing was analyzed using the marketing efficiency computation. The result of the computation is presented in Table 6.

**Table 6:** Efficiency of fresh fish marketing

|  |  |  |  |
| --- | --- | --- | --- |
| **Sample**  | **Value Added (N)** | **Cost of Marketing (N)** | **Marketing Efficiency** |
| Kede – TifinSampled Markets  | 631,900 | 10,642,069 | 5.94 |

  **Source:** Field survey data, 2019

The result in Table 6 revealed that N691,900 values was added to the marketing activities with the marketing efficiency of 5.94%. This value is an indication that fresh fish marketing in the study area was highly efficient. The finding is in line with the finding of Obasi *et al* (2012) on the analysis of dried maize marketing in Aba South LGA of Abia State, Nigeria (17.31%).

**Constraints to fresh fish marketing**

A number of factors are being faced by fresh fish marketers in the study area. A summary of these factors is presented in Table 7. Results in Table 7 revealed that price instability ranked 1st among the myriad of factors and in decreasing magnitude of importance, as an overwhelming majority, 107 (89.16%) encountered this problem in fish marketing activities in the study area. The implication of this finding is that the price instability could erode the profit margin of the players in the industry, as lower price could constrain the realization of the goal of profit maximization. This is in line with the study of Nwabueze and Nwabueze (2010), who submitted that, instability in the price of product is one of the problems militating against the fresh fish marketing in Oshimili South LGA of Delta State, Nigeria. Inadequate capital and Lack of credit facilities (especially marketing loans) ranked 2nd on the severity of the problems confronted by the fresh fish marketers in the study area, whereby a large majority, 94(78.33%) were confronted with this problem. The implication is that, capital being the bedrock of any meaningful business, marketers with large capital have the propensity to expand their business and consequently make a large returns, whilst those with small capital make lower returns and constrained with little or no future investment/expansion. This finding is in consonant with the findings of Adeosun and Adebukola (2012) who in their study of the Determinants of Income from fish marketing in Iparapa area of Oyo State, Nigeria submitted that inadequate capital is a major problem in the study area.

In addition, high cost of transportation ranked 3rd in decreasing magnitude of importance, as an appreciable number, 78 (65.00%) encountered this problem in their fresh fish marketing activities. The high transportation cost which was due to bad nature of Nigerian roads, especially the rural economies and the increase in the pump price of petroleum products, consequent of the deregulation of the downstream sector of the petroleum Industry (Ndanitsa, 2005), often erode profit margin of the marketers as it adds to cost of production and affects demand. This finding is in agreement with the finding of Kainga and Adeyamo (2012) and Ndanitsa *et al* (2020).

Fresh fish marketers in the study area also revealed that seasonality of product is a major constraint to their business as revealed by 76(63.33%) of the respondents. The implication of this factor which ranked 4th in decreasing magnitude of importance could depress the profit maximizing goal of the players in the industry especially during the fishing season; lack of storage facilities and ready market for products could depress the price and jeopardize fisher folk confidence. This problem became aggravated during the off season when there is no fish supply, and the marketers could become unemployed and depend on savings from past income as the only means of survival. The propensity for future investment is therefore reduced. This finding is in line with the finding of Ali *et al* (2008) and Tsoho (2005).

The result of the analysis in table 7 also revealed that storage problem ranked 5th is decreasing magnitude of importance; 67(55.83%) indicated that the problem of inadequate storage facilities affects the state of freshness and consequently affects the final price of product, as it passes through the marketing channel and erodes their profitability. This finding also, is in consonance with the finding of Aworth (2012). Other factors that constrained fresh fish marketing in the study area include inconsistency in government policy, 56(46.67%), inadequate power supply, 50 (41.67%), and low patronage of product, 46 (38.33%), and ranked 6th, 7th and 8th respectively.

**Table 7:** Constraints to Fresh fish marketing in the study area.

|  |  |  |  |
| --- | --- | --- | --- |
| **Constraints**  | **\*Frequency**  | **Percentage**  | **Ranking**  |
| Price instability  | 107 | 89.16 | 1st  |
| Inadequate Capital and Lack of credit facilities  | 94 | 78.33 | 2nd  |
| High cost of transportation  | 78 | 65.00 | 3rd  |
| Seasonality of fish product  | 76 | 63.33 | 4th  |
| Storage problems  | 67 | 55.83 | 5th  |
| Inconsistency in government policy  | 56 | 46.67 | 6th  |
| Inadequate power supply  | 50 | 41.67 | 7th  |
| Low patronage  | 46 | 38.33 | 8th  |
| Total  | \*574 | 100.00 |  |

 **Source:** Field Survey, 2019

(\*Multiple responses)

**Conclusion and Recommendations**

The study had examined the Economic Analysis of fresh fish marketing in Kede Tifin district of Mokwa Local Government Area of Niger State, Nigeria, and revealed that the market is not competitive, even though the enterprise is profitable. However, it was evident that the marketers are constrained with a number of factors towards the realization of their goal of profit maximization. The need for the provision of credit facilities, has become imminent in increasing the marketers activities. This will involve the establishment of sustainable micro-credit schemes. Fisherman in the area should be encouraged to go into fish farming ventures in order to ensure constant supply of product to the marketers, Feeder roads linking the landing sites and major marketing centres should be constructed and storage facilities should be provided, among others. This would translate to increased capacity utilization, increased marketing activities, increased income and poverty reduction in the study area.

**References**

Adeleke, M. L. and Afolabi, J. A. (2012). Appraisal of Fresh fish marketing in Ondo State, Nigeria. *IIFET 2012 Tanzanian proceedings in Akure.* Federal University of Technology, Akure.

Adeosun, O. and Adebukola, F. B. (2012). Determinants of Income from Fish marketing in Iparaba Area of Oyo State, Nigeria. *Science Journal of Agricultural Research and Management* 2012 (135): 1 – 6.

Ali, E. A; Gaya, H.I.M and Jampada, T. N. (2008). Economic Analysis of Fresh fish marketing in Maiduguri Gamboru Market and Kachallari Alau Dam Landing site of North – Eastern Nigeria. *Journal of Agriculture and Social Science*, 4:23-26.

Anvebunwa, F. O. (2006). Marketing of fresh Okra in Ebonyi State, Nigeria. National Root Crops Research Institute, Umudike, Umuahia, Abia State. *Journal of Production Agriculture and Technology* (PAT), 4(1): 71-81

Aworth, O. C. (2012). Reducing Post-harvest losses of Horticultural Commodities in Nigeria than improved packaging.

Baba, K. M. and Etuk, E. G. (1991). “Resource – use efficiency and constraints in Irrigated Agriculture, Empirical evidence from Bauchi State, Nigeria. *Journal of Agricultural Technology,* 3(10): 1 – 6.

Baba, K. M. and Wando, M. A. (1998). Impact of Membership of *Fadama* Users Association on resource use, crop yield and farm Incomes: a case study from two Local Government Areas in Niger State, Nigeria”. *Nigeria* *Journal of Basic and Applied Science* 7:31-41.

Eboh, E. C. (1995). “Poverty, Population growth and Environmental degradation: the Vicious Cycle of Human misery”. In: Eboh, E. C. Okoye, C. U and Ayichi, D. (eds). Rural Development in Nigeria: Concepts, processes and prospects. Auto-century publishing company, Enugu, Nigeria PP274-285.

Food and Agriculture Organization, FAO (2002). The State of World Fisheries and Aquaculture, 2002. Food and Agriculture Organization, Rome, PP47.

Food and Agriculture Organization, FAO (2012). The State of World Fisheries and Aquaculture Department, Rome, 1-30pp.

Food and Agriculture Organization, FAO (2014). The State of the World Fisheries and Aquaculture Opportunities and Challenges, FAO, Rome, 3-18pp.

Haruna, U; Sani, M. H., Danwanka, H. A. and Adejo, E. (2002) Economic Analysis of Fresh Tomatoes Marketing in Bauchi Metropolis of Bauchi State, Nigeria: *Nigeria Journal of Agriculture, Food and Environment.* 8(3): 1 – 8.

Iheanacho, A. C. (2005). Structural characteristics and performance of retail marketing of Eggs in Maiduguri metropolis of Borno State, Nigeria. *Journal of Sustainable Development, Agriculture and Environment,* 1:70-76.

Inuwa, I. M. S; U. B. Kyiogwom, Ala, A. L., Maikasuwa, M. A; and Ibrahim, N. D. (2011). Profitability Analysis of Rice Processing and marketing in Kano State, Nigeria. *Nigerian Journal of Basic and Applied Science,* 19(2): 293-298.

Kainga, B. E. and Adeyamo, A. O. (2012). Socio-economic Characteristics of Fish Marketers in Yenagoa Local Government Area of Bayelsa State, Nigeria. *World Journal of Young Researchers* 2(1):3-6.

Lawal, W. L. (2002). Economic Analysis of Fish culture in Benue State. A Ph.D Thesis, submitted to the Department of Agricultural Economics, University of Agriculture, Makurdi, Benue State, Nigeria.

Lawal, W. L. and Idega, E. O. (2004). Analysis of fish marketing in Benue State. *Proceedings of 2004 Annual Conference of the National Association* *of Agricultural Economists (NAAE),* held at ABU, Zaria, Nov. 3rd – 5th 2004.

National Population Commission (NPC), (2006).

Ndanitsa, M. A. (1994). “Problems of Fish Production and Marketing in Lavun Local Government Area of Niger State, Nigeria”. Unpublished B.Sc Project submitted to the faculty of Agriculture, Usmanu Danfodiyo University, Sokoto, Nigeria.

Ndanitsa, M. A. (2005). “Economics of *Fadama* crop production in Niger State of Nigeria”. Unpublished M.Sc. Thesis, Department of Agricultural Economics and Farm Management, University of Ilorin, Ilorin, Nigeria 147pp.

Ndanitsa, M. A; Umar, I. S; Mohammed, U. S. Sani, T. P. and Ndako, N. (2013). Costs and Returns Analysis of Artisanal Fish Farming (*Lates)* in Kade-Tifin District of Mokwa Local Government Area of Niger State, Nigeria. *Journal of Agriculture and Agricultural Technology* (JAAT), 4(1): 24-35.

Ndanitsa, M. A., Umar, I. S., Alhassan, H. A. and Dauda, M. (2020). Effects of Niger State Rice Investment Consortium Project on Income of Smallholder Rice Farmers in Niger State, Nigeria. *Journal of Agricultural Research and Environment.*

Nwabueze, A. A. and Nwabueze, E. O. (2010). An investigation into the problems of fresh fish marketing in Oshimili South Local Government Area of Delta State, Nigeria. *Agriculture and Biology Journal of North America*: 1 – 4.

Obasi, I. O., Majeha, R. O. and Okocha, M. S. (2012). Dried Maize Marketing in Abba South Local Government Area of Abia State, Nigeria: Implication for Employment. International Conference on Trade, Tourism and Management: *Implication for Employment, International Conference on Trade, Tourism and Management ICTM, 2012.*

Ojo, A. O. (2012). Analysis of Spatial and Temporal Pricing Efficiency of Rice marketing in Kwara and Niger States, Nigeria. An unpublished Ph.D Thesis submitted to the Department of Agricultural Economics and Extension Technology, School of Agriculture and Agricultural Technology, Federal University of Technology, Minna, Niger State, Nigeria.

Olukosi, J. O. Isitor, J. U and Moses, O. O. (2004). *Introduction to Agricultural Marking and prices: Principles and Applications:* 4th Edition.

Omolanwa, T. D. (2011). Marketing Structure of Fresh fish at Olomore freshwater fish market in Abeokuta, Ogun State, Unpublished B.Sc (Agric) project report submitted to the Department of Agriculture and fisheries management College of Environmental Resources management, University of Agriculture, Abeokuta, Nigeria.

Osuntogun, A. (2000). Some aspect of Farm level credit use in Nigeria: Savings and Development, Quarterly review, NO. 1 pp360.

Salihu, I. (2011). Economics of fresh fish marketing in Kontagora Local Government Area of Niger State, Nigeria. Unpublished B. Tech (Agric.) project submitted to the Department of Agricultural Economics and Extension Technology, Federal University of Technology, Minna, Nigeria.

Shuaibu, M. K. (2015). Economic Analysis of Fresh Fish marketing in selected Local Government Areas of Niger State, Nigeria. Unpublished M.Tech Thesis submitted to the Department of Agricultural Economics and Extension Technology, Federal University of Technology, Minna, Niger State, Nigeria.

Tsoho, B. A. (2005). Economics of Tomato-based cropping system under small-scale irrigation in Sokoto state, Nigeria”. Unpublished M.Sc. Thesis, Department of Agricultural Economics and Farm Management, University of Ilorin, Ilorin, Nigeria. 76pp.

United States Agency for International Development (USAID) (2014), FEWSNET Programme (2014): [www.fews.net](http://www.fews.net)

Wikipedia (2013), <http://www.mbnet.mb.callw.smith/evaluation.html>.

Williams, S. B. (2002). “Making each and every African fisher count. Women Do Fish”. In: Williams, M. J. *et al* (eds). Global symposium on woman in fisheries; world fish centre, Manila.

Yisa, T. A; J. O. Oyero and Ndanitsa, M. A. (2012). Socioeconomic impacts of selected processing methods among Artisanal fish processors around piver Gbako, Niger State. *Nigerian Journal of Fisheries:* 9(1): 421-427.