

THE ROLE OF WOMEN IN FISH PROCESSING; HANDLING AND MARKETING IN KAINJI LAKE BASIN.

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ABSTRACT

The study assessed the contribution of women in fish handling, processing and marketing in Kainji Lake Basin. Structured questionnaires were administered to three fishing villages selected at random. The fishing villages were Monnai, Yuna, Fakun and New Bussa Market. The study revealed that women play vital roles in fisheries activities as producers, assistants to men, preservers, traders and financiers. The notable fishing activity performed by women is processing right from the moment the boats or canoes land at sites. Women assist in emptying nets, sorting, gutting and cleaning the catch. In most cases their activities involved salting, smoking and drying using traditional processing techniques. Women are also involved in storage and marketing of both fresh and smoked fish. In spite of these important contributions, most women in the various fishing communities are illiterates, have little or no say in decision making in areas that affect their livelihood and are regarded as inferior. Culture and religion also have significant impact on their contribution in fishing activities.

INTRODUCTION

Fish is a nutritious aquatic animal. It constitutes a reasonable percentage of the dietary of human consumption when processed. The principal nutritional constituents of fish in nearest analysis include the following: water, protein, lipid, minerals, vitamin B₂ etc.

The importance of fish production on the tropics in particular and the world large can never be over emphasised, it is a source of staple food, raw materials for our growing factories, and job opportunity for the teeming population. Fish production from tropical waters has increased in recent years reaching about 15 million tonnes in the 19th Century up till date and forming 17 percent of the world's total catch. The production is composed of 11 million tonnes of marine fish (80 %) and 4 million tonnes of fresh water fish (20%) Eyo 1996).

Fish when out of water deteriorates fast except immediate steps are taken to preserve its quality. Despite the subsistence nature of our capture fisheries in Nigeria, as much as 50% post-harvest losses are recorded, that is half of the total subsistence productions are wasted. The result of this is economic losses to farmers, fish processors and marketers (Bolorunduro 1996).

Women dealing in fish marketing can be categorized into three, those dealing in the trade on a full time basis with all facilities such as deep freezers, weighing scales, attendants and vehicles, those that go to the lake shore every morning to buy and hawk around the town and civil servants, or wives of civil servants dealing in fish trade to supplement their income.

The first category of fish dealers invest large amount of money in the business because it is capital intensive. The other category invest little capital on the business, since the quantity is small they can carry it all around or might decide to smoke them if it attempts to spoil.

Majority of the women are dealers who travel from village to village looking for smoked fish to purchase. They also patronize fish marketing centers to make up for their demand.

FISH HANDLING

Bolorunduro (1996), stated the Handling refers to the human environmental contact with fish from the fishing ground to the consumer centres before they are either sold to the consumers, preserved or processed.

In general, purchasing of fish product depends not only on quantity but quality. A qualitative fish have the highest market demand. Qualitative fish mean products that are well preserved that is smoked, sundried, salted or freezed.

Fish, which are not properly preserved, gets rotten and loses value, because they are perishable goods that need proper handling.

PROCESSING

Processing can be defined as a method applied to the fish from the time of harvest to the consumption period. In other to prevent fish deterioration, every fish processor must strive to employ the best method possible in handing fish to maximize returns on processing investment.

The existing traditional practice of smoking salting and sundrying can be improved upon as follows.

1. FISH SMOKING

Modern smoking kilns that are more efficient and economical to processors include modified Altona (waterable) kiln, modified drum kiln, and Kainji Gas kiln, some steps in fish smoking are highlighted below -

- * Wash the fish with clean water as it is being removed from the handing platform
- * Sort the fish out into sizes
- * Bleed the fish by making a cut around the head region near the operculum.
- * Cut the by the abdomen and empty the viscera, clean the fish again thoroughly in clean water.
- * Brine the fish in salt water for 30-45 mins. In the ratio (1:5) of salt to water solution at 2 cups of salt to 10 cups of water. Then remove the fish and allow the water to drain
- * Then load the fish in the smoking chamber with gentle heat to ensure uniform smoking.

SUNDRYING

This is common in areas with abundant sunshine. To have a good sundried product, repeat the procedures (a-f) above and protect the fish with fine wire mesh to avoid menace of flies

SALTING

Salting is used in combination with smoking or sundrying. Salting facilitates fish drying, preserve it from insect infestation and improves the quality and taste

ICING

This is one of the best methods of reducing spoilage of fish. The right quality of ice must be applied at all times. Iceboxes have been developed to transport and preserve fish. The National Institute for Freshwater Fisheries Research Kainji has established that 50kg of fish can be conveniently preserved with 20kg of ice i.e. Ratio of 5:2 with layers of ice and fish alternating. Using the icebox it has been reported that tilapia and catfish will remain edible for 25 to 30 days and 16 to 20 days respectively if buried in ice. Better results are obtained if the fish are gutted and wrapped. Bolorunduro (1996).

FREEZING

The common cabinet freezer popularly called deep freezer can be used, stages (a-d) of smoking method should be followed. With regular light supply the keeping quality of the fish will be guaranteed, temperature of freezers often fluctuates in response to opening and closing of the equipment. So frequent opening and over load the freezer should be avoided

Alamu (1991) stated that marketing is the most important stage on the various stage of the fishing industry. With out the fish (either fresh or processed) getting to the consumer, the efforts of the fishermen or women cannot be adequately compensated for.

PROBLEM STATEMENT

It has been reported by various workers that women play major role in traditional activities such as subsistence food production, food processing, home crafts and domestic work..

Alamu, (1991) has reported on the contribution of women to fish handling, processing and marketing in Kainji Lake basin. But there is the need to update information on the present situation due to time lag and general changes in economic level of the people. This study is approached from the local areas to capture the influence of the Dam on the adjacent areas.

OBJECTIVES OF THE STUDY

- i. To identify the contribution of women in fish handling, processing and marketing in Kainji Lake Basin
 - ii. To identify the different method of fish preservation.
 - iii. To identify the problems faced by fish handlers in carrying out their activities
- Suggest possible solution to the problems highlighted.

JUSTIFICATION OF THE STUDY

The result of this study would provide empirical evidence on the present contribution of women in fish handling processing and marketing on the study area. This would help policy makers to development agencies in planning any intervention Programme aimed at fish processing and markets.

SCOPE AND LIMITATION OF THE STUDY

This study will be centered on major fishing areas located along riverine area in Kainji Lake Basin. The fishing areas are Fakun, Yuna, Monnai and New Bussa Town.

MARKETING

Marketing can be define as a business activities perform in shifting of products from the production centre until it finally arrived in the hand of the consumer.

FISH MARKETING IN AFRICA

The general method for marketing small scale catch in almost all west African countries is that, on landing, the fish are sold to middlemen, usually women who are either the fishermen's wives, kin, or an unrelated entrepreneur. These women are frequently, referred to as "fish mammies" (Alamu 1999)

Alamu (1992) reported that in Benin, the wife or wives of the boat owner buys the catch. In order of priority they are followed by wives of crew members, then other women from the settlement and finally outsider. In Tombo, Sierra Leone, 85% of the female fish buyers are attached to specific vessels or fishermen (normally two to three boats) and are expected to buy only from them.

Fish are sold under at various scales and measures, they are priced on the basis of weight, measure and scale or in bunch for consumption. At the wholesale level, the measures are rather more standard used as weight and measure.

NATURE OF MARKET

Fish markets are held daily and at periodic intervals the essence of daily market is that, they are continuous in operation (from day today) as opposed to the periodic ones which are held on certain fixed days, the daily market are more common urban than in rural areas, explanation for this seems to be, that daily operation of market is necessary to satisfy the needs of the large population of urban settlement.

Most periodic market are held at intervals of two, four and eight days. A few others are held weekly or monthly, furthermore, most of the market operates on what has been called a ring system. A ring is defined as a complete and integrated sequence of markets operating over four days or multiple of four days (Alamu 1998).

FUNCTION OF MARKET

Since market is the interaction of buyers and sellers. It can also provide a meeting place for exchange of ideals apart from goods. The market serve some economic purposes.

(Alamu 1998) stated that market in Africa are place where friends, hear news, and even make marriage contract. One of the most important economic functions of market is that they are centres for dissemination of information relating to local and central government administration.

It is therefore, a common practice that a bell ringer goes around the market announcing the decision of government to the people and this happen in some places even today. The markets are also important for the circulation of news. In fish market, since women, the buyers and sellers control 65% of the business provide an audience to any body who has anything new or interesting to say.

Since fish are delicate to deal with and handle, much care is required in marketing and packing. The moment there are breakages it reduces the market value.

Alamu (1998) reported that packaging and branding is an important element in the marketing system of fish in Kainji and its environment. He stated that when the buyers collect the fish in various selling units they settle down to do serious repacking into cartons for easy transportation to the various distant place they come from. The names of the dealers are inscribed on each carton, such inscription provides brand loyalty to the buyers who come weekly to buy from them. The commodity are sold to consumer at prices determined by sizes and distance of they are transported

Insecticides are often sprayed to prevent pest infestation.

METHODOLOGY

AREA OF STUDY

The research was carried out in Borgu Local government area of Niger State. The Borgu Local government area has one major lake (Kainji Lake basin), which was formed from River Niger. As a result, fishing activities are carried out effectively in the riverine area of the local government

Borgu is endowed with much natural resources these resources comprised the River Niger and superfluous forest and wildlife.

The territory lies between latitude 9°N and 11°N and longitude 10°E and 40°E, covering a landmass of about 16,200 square kilometers, providing both natural and acquired materials of attraction to Tourist.

It has a population of about one hundred and two thousand, three hundred and seventy (102,370) people, most of who are scattered along the lake from New Bussa to Dugga there by

defining the Major occupation of Borgu – Family and Fishery a significant natural blessing to the people.

SOURCE OF DATA

Data for this study was collected from primary and secondary sources primary data collection was through the use of questionnaires. The study was grouped into three major categories. Items in each category were believed to have an effect on how fish are handled processed and marketed in Lake Kainji areas.

The categories are: -

- Fishing method
- Method of fishing Processing
- Marketing and common types of fish available

Category (i) contain five (5) items, the items highlighted what method of fishing do they use?

Category (ii) contains four (4) items related to the method used in the processing and preservation of fish.

Category (iii) contain six (6) items, which highlighted how fish are being marketed in what form and in what means

The questionnaire was divided into two (2) one for fisher folk while the other is for fish marketers (managers)

SAMPLING PROCEDURE.

The study used multistage sampling techniques. The first stage involves the selection of fishing villages. Four (4) villages were randomly selected from the list of riverine villages obtained from Agricultural Department of Borgu Local government Area. They are Fakun – Yuna, Monnai and New Bussa.

The second stage of sampling is the selection of respondents. Twenty (20) fisher folks were randomly selected in each village. The list of fisher folk obtained in each village serves as sampling frame for the study.

Sampling of fish mongers (marketers) were made from every other seller met at the market in each of the villages selected. Positive sampling of fish sellers using Deep freezers were made in addition to those met in the market.

Out of the 80 questionnaires administered while 62 were used for the purpose of Analysis after discarding those not fully filled and those with inconsistencies.

METHOD OF DATA ANALYSIS

Data obtained from the questionnaires were analyzed with the use of descriptive statistic using frequency and percentage.

DEMOGRAPHIC CHARACTERISTICS OF RESPONDENT

Age Distribution of Respondent.

TABLE (1)

| Age Group | No of respondent | Percentage % |
|---------------|------------------|--------------|
| 20 –30 | 39 | 63 |
| 30 –40 | 19 | 31 |
| 40 –and above | 4 | 6 |

Source: Field Survey (2003)

Table (1) shows the age distribution of the respondent. The table shows that 58 (94%) respondent are within the age of 20 and 40 years. This shows that majority of the respondents are within the active period of their life. This shows that fishing operation is common among the young and agile population in the communities.

Table (2) State of Origin of sampled Respondents

| State | No of respondent | percentage |
|---------|------------------|------------|
| Anambra | 2 | 3.2 |
| Bayelsa | 2 | 4.3.2 |
| Imo | 4 | 8.6.5 |
| Edo | 2 | 4.3.2 |
| Kogi | 2 | 4.3.2 |
| Delta | 8 | 12.9 |
| Niger | 24 | 38.7 |
| Kebbi | 4 | 6.5 |
| Benue | 4 | 6.5 |
| Sokoto | 6 | 9.6 |
| Oyo | 1 | 1.6 |
| Osun | 1 | 1.6 |
| Kwara | 2 | 3.2 |

Source: - Field Survey (2003)

TABLE (2)

Indicate that the respondent come from thirteen (13) states of Nigeria. We have both Northern state Migrant from Sokoto, Kebbi, Benue and Kogi state and southern Migrants from Anambra, Bayelsa, Imo, Edo, Oyo, Osun and Kwara States. It is interesting to note that we now have migrant from southwestern Nigeria

Table(3) Marital Status and Religion of Respondents

| Marital Status | No of respondent | Percentag e | Religion | No of respondent | % |
|----------------|------------------|----------------|-----------|------------------|----|
| Single | 7 | 11 | Islam | 51 | 82 |
| Married | 53 | 86.0 | Christian | 11 | 18 |
| Widow | 1 | 2 | | | |
| Divorce | 1 | 2 | | | |

Source: Field Survey (2003)

TABLE (3) Shows that Majority of the respondent are married 86%are married. But these we notice do not prevent them from participating fully in fishing activities. They interact also at the market freely. Majority of the respondents are (82%) are Muslims.

TABLE (4) Education Background of Respondents by Village

| No of villages | Primary | Secondary | Quranic | No formal education | Tertiary |
|----------------|---------|-----------|---------|---------------------|----------|
| Fakun | 3 | 8 | 0 | 1 | 0 |
| Monnai | 2 | 21 | 10 | 3 | 0 |
| Yuna | 4 | 1 | 6 | 5 | 0 |
| Bussa Mkt | 5 | 1 | 3 | 3 | 7 |

Source filed survey. (2003)

TABLE (4) shows that in Fakun majority of the respondents are illiterate this may be due to fact that majority are southern migrant while in Monnai majority have quranic education probably because they are predominantly Muslims.

Education background of respondents.

TABLE (4b)

| No of villages | Frequently | Percentage |
|----------------|------------|------------|
| Primary | 14 | 23 |
| Secondary | 14 | 23 |
| Quranic | 18 | 29 |
| Illiterate | 11 | 18 |
| Tertiary | 5 | 8 |

Source: field survey. (2003)

Table (4b) shows that out of the total women sampled, 23% attend primary & secondary school while only 11(18%) of the women are illiterate make it easy to pass new innovation across to these fisherfolk.

TABLE (5) Major Occupation of Respondent

| Major Occupation | No of respondent | Percentage |
|------------------|------------------|------------|
| Fisher women | 24 | 39 |
| Petty traders | 38 | 61 |

Source: - Field Survey. (2003)

Table (5) indicates that 39% of the respondent are fisher women who actively go to the river for fishing as their major occupation while 61% are petty traders whose activities indicate the processing and selling of fish at home. This is line with Babalola (1976) who observed that the bulk of trading activities is in the hand of women Alamu (1998) also noted that the fishermen with the help of their wives smoke the fish and assist in selling the fish on market days.

TABLE (6) Years of Experience of Respondent in Fishing Activities

| No of Village | 1 – 5 years | 5 – 10 years | 10 – 15 years | 15 years and above |
|---------------|-------------|--------------|---------------|--------------------|
| Fakun | 3 | 4 | 5 | 0 |
| Monnai | 0 | 6 | 4 | 6 |
| Yuna | 0 | 2 | 5 | 8 |
| Bussa Mkt | 1 | 2 | 11 | 5 |

Source: - Field Survey. (2003)

Table (6a) shows that in Fakun 3(25%) of the respondents have been in the fishing activities between a period of 1 – 5yrs while 4(33%), 5(42%) fall within the period of 5 – 10 & 10 – 15yrs respectively. In Monnai 6(38%) fall between 5 – 10yrs 4(25%) and 6(38%) falls within 10 – 15yrs & 15 – above, in Yuna 2(13%) fall within 5 – 10yrs 5(33%) with 10 – 15yrs and 8(58%) within 15yrs and above on Bussa, 1(5%) within 1 – 5yrs, 2(11%) within 5 – 10yrs, 11(58%) within 10 – 15yrs & lastly (20%) falls within 15 and above yrs of fishing.

TABLE (6b) Years of Experience of Respondents in Fishing Activities

| Number of years | Frequency | Percentage |
|-----------------|-----------|------------|
| 1 – 5 | 4 | 7 |
| 5 – 10 | 14 | 23 |
| 10 – 15 | 25 | 40 |
| 15 above | 19 | 31 |

Source: - Field Survey, (2003)

Table (6b) this table shows that the respondents that are into fishing activities within a period of 1 – 5yrs are 8(32%) while those within 5 – 10 & 10 – 15, 15 & above are 10(40%), 4(16%) and 3(12%) respectively. this strictly reveals that fishing by women is still an activity that is still relatively new as about 30% of the respondent have less than 10yrs experience in fishing.

TABLE (7) Types of gear used by respondents in fishing activities

| Gear | No of respondent | Percentage |
|-------------|------------------|------------|
| Cast net | 36 | 58 |
| Gill net | 14 | 23 |
| Atalla | 5 | 8 |
| Long line | 6 | 10 |
| Malian Trap | 1 | 2 |

Source: - Field Survey, (2003)

Table (7) shows that 36(58%) uses cast net while 14(23%), (8%), 6(10%) and 1(2%) use Gill net, Atalla net, Long line and Malian trap respectively. This suit shows that majority use the cast net and gill net mostly due to their ability to catch immediately or efficiently. The rest gears are mostly traps and not effective for fishing. Hence they are passive gears.

PROCESS BEFORE SELLING

TABLE (8) Distribution of respondents engaged in processing in the study areas

| No of Village | Yes | Percentage (%) | No | Percentage (%) |
|---------------|-----|----------------|----|----------------|
| Fakun | 9 | 14 | 3 | 5 |
| Yuna | 13 | 21 | 2 | 3 |
| Monnai | 11 | 18 | 5 | 8 |
| Bussa mkt | 16 | 26 | 3 | 5 |

Source: - Field Survey, (2003)

Table 8) shows that the total number of people that process their fish in fakun are 9(14%) while Yuna are 13(21%), Monnai 11(18%), Bussa 16(26%) the total number of people in Fakun that are not processing there are 3(5%), Yuna 2(3%) Monnai 5(8%) while Bussa are 3(5%) respectively.

TABLE (9) method of fish processing by respondents

| No of Villages | Scaling, gutting, Salting, gutting (A) | Cutting &, sticking (B) | A & B above |
|----------------|--|-------------------------|-------------|
| Fakun | 5 | 5 | 5 |
| Monnai | 5 | 4 | 6 |
| Yuna | 5 | 7 | 8 |
| Bussa mkt | 4 | 3 | 12 |

Source:- Field Survey, (2003)

Table (9) data analysis indicates that majority of the women process the fish they handled in one way or the other before selling them.

TABLE (9b) Percentage method of fish processing by respondents

| Some processing method | Frequency | Percentage |
|------------------------------------|-----------|------------|
| Scaling, gulling, Salting, gutting | 14 | 23 |
| Sticking & Cutting | 16 | 26 |
| A & B above | 32 | 52 |

Source: Field Survey, (2003)

Table (9b) shows that out of respondent interviewed in Borgu Local Government 14(23%) process their fish by scaling, gutting, Salting, gulling, cutting are 16(26%) are 32(52%). This result confirm that right from the moment the boats lands women assist in emptying the net, sorting, gutting, salting, gulling cleaning the catch etc. infact, almost all the female members of the family are engaged in this stage of fishing industry regardless of age and marital status. This is because this role is done mostly inside their fenced compounds.

TABLE (10) Method of Preservation

| No of Village | Smoking | Sundrying | Freezing |
|---------------|---------|-----------|----------|
| Fakun | 9 | 3 | 0 |
| Monnai | 12 | 4 | 0 |
| Yuna | 13 | 2 | 0 |
| Bussa | 11 | 3 | 5 |

Source:- Field Survey, (2003).

Table (10) shows that the most common type is by smoking, then followed by Sundrying. This also shows that smoked fish is very marketable in these areas. Freezing is done only in Bussa where agents that transport fresh fish to other parts of the country recite and availability of electricity

TABLE (11) Problem faced by respondents in the course of preservation

| Problem of Preservation | No of Respondent | Percentage |
|-------------------------|------------------|------------|
| Lack of Facilities | 22 | 36 |
| Cost of preserved wood | 13 | 21 |
| State of the fish | 27 | 44 |

Source:- Field survey, (2003)

Table (11) shows that 22(36%) respondent indicated that lack of storage facilities the major problem of preservation while 13(21%) indicated cost of preserved wood used as the major

problem. Majority 27(44%) of the respondent indicated the state of fish i.e the quality of fish caught as the major problem.

TABLE (12) Market of Fish.

| Name of Village | Batch | % | Kilogram | % | Basket | % |
|-----------------|-------|----|----------|----|--------|----|
| Fakun | 6 | 7 | 7 | 11 | 8 | 13 |
| Monnai | 9 | 15 | 2 | 3 | 2 | 3 |
| Yuna | 5 | 8 | 1 | 2 | 7 | 11 |
| Bussa mkt | 9 | 15 | 1 | 2 | 5 | 8 |

Source: - Field Survey, (2003)

Table (12) shows that 29(45%) people are marketing their fish in batch while 11(18%) sell their fish in kilograms.

DISCUSSION

This study aimed at assessing the roles women play in various stages of fishing operation with the view of ascertaining their contribution towards the fishing activities, identify the different methods of processing and preservation and the problems highlighted from consensus. It is interesting to note that more of the women sampled in Fakun and New Bussa markets are southern migrants fisher women engaged in the various stages of fishing operations. Some of them go to the lake with their male counterparts to set traps and catch fish. While those from Monnai and Yuna only performed the activities of processing and preservation. Right from the moment boats or canoes landed, women assist in emptying nets sorting, gutting, clearing, smoking, drying etc using traditional processing techniques. It was also found that some are involved in marketing of both fresh and smoked fish. Women from these villages are restricted by religion to participate in any activity that would expose them to other men other than their husbands and males members of their immediate family.

Smoked fish are taken to the market where they are sold using baskets, in batch and some weight in kilograms.

Itinerant fishmongers visit them in their various fishing villages and purchase the fish.

The response from the respondents showed that majority of the women is illiterate. This factor cannot make for the adoption of technologies so developed. Culture & religion also have different impacts on fishing activities.

These opinions are in line with the various views of some earlier studies on the contribution of women in fish handling processing and marketing.

CONCLUSION

These study revealed that in the domestic economy, women featured prominently in several socio-economic activities such as trading, farming, processing caring for children etc. All these activities present an avenue for improvement of family income through the provision of better skills and equipment to women so that they perform their traditional role efficiently.

Despite these important roles most women in various fishing communities are illiterate. have little or no say in the decision making in areas that affects their livelihood and are regarded as the inferior sex.

Traditional Fish handling (processing) is characterized by constraints imposed on production efficiency of women fisherfolks, the quality of fish product (as a result of poor handling), the buying and the selling activities of marketers.

The attendant problems associated with processing and handling, transportation, storage and pricing reflect serious setback on economic efficiencies of women fisherfolks in Lake Kainji

RECOMMENDATION

In the light of the above fore going, these recommendations are considered relevant. These women should be encouraged to take active part in fishing activities regardless of their marital status because fishing is labour intensive and the roles that men, women and children play in this occupation are complementary.

Women should shift their attention from capture fisheries for fish production to culture fisheries to free themselves from religious and cultural retractions

Credit facilities should be advanced to the women to help them increase their catch ad acquire processing and preservation equipments.

Improvement in the status of women have to be taken into consideration from the rural organization conducive to such an improvement by organizing them first for credit assistance, then into their own cooperative society where they will be enlighten for self-help, self-slaugt on mass poverty and self- reliance.

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