

**RESEARCH ARTICLE**

**The Roles of Women in Fish Processing Activities in Some Local Government Areas of Rivers State, Nigeria**

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**ABSTRACT**

Fish processing activities in some communities of Rivers State were investigated to determine the role of women in its development and sustainability. Fifty structured questionnaires were randomly distributed in five communities (10 per community) across three local government areas of the state. The results from the study indicated that most of the respondents are young and married women. They are actively involved in fish processing activities in combination with fishing. The women had between 6 and 10 years of experience in fish processing. In the study area, women utilized smoking as major processing methods, with mullets, sardine, and tilapia as major species processed by the women. Fish processing in these communities is done mostly by smoking using a locally made kiln which can dry a lot of fish at a time. Occupational hazards associated with fish processing include skin rashes, redness of the eye, offensive body odor, and bruises. Moreover, insufficient capital, lack of modern processing facilities, poor storage facilities, and scarcity in fish supply have been identified as major constraints facing women involvement in processing activities in these communities. There is, therefore, the need to empower the women fish processors in these areas through granting of loans and credit facilities, capacity building, introduction of improved fish processing equipment, and storage facilities. These will go a long way in enhancing fish production, improve their livelihood, and boost socioeconomic status of these women processors in the study areas.

**Key words:** Coastal, communities, fish, Nigeria, processing, women

**INTRODUCTION**

The importance of fish production in the tropics in particular and the world at large can never be overemphasized; it is a source of protein food, raw materials for industries, and job opportunity for the increasing population across the globe. Fishery activities in most of the developing countries are usually considered as masculine venture, women role in fish-related activities is though supportive, is imperative and indispensable. However, their roles in many fishing communities are not being recognized, consequent of primitive structure of social setting that is common in the rural areas

of many developing countries such as Nigeria. Conversely, Tamale (2004) observed that the non-recognition of women involvement in production practices is enhanced by uneven allocation of resources. Therefore, lack of access and control over productive process is one of the major issues limiting women participation in economic venture such as coastal fishery activities. Women in remote areas participate actively in the traditional fisheries subsector of the economy. They are either fully involved or play a complementary role for men in provision for their families. There is, therefore, the need to promote and to encourage women folks in this sector, so as to boost supply of food fish and improve the economic welfare of their families.<sup>[1-5]</sup>

Processing and appropriate storage of fish is a common practice all over the world, this is

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because fish food contains low acid food that is vulnerable to pathogenic and enzymatic spoilage and it is one of the most perishable of all stable foods, especially in tropical climate regions of the world. In most fishing communities in Nigeria, more than 70% of fish harvested are preserved by various means ranging from salting to drying so as to prolong shelf life and these processed fishery products are highly acceptable by the local consumers. The major processing methods being used are smoking, drying, salting, roasting, boiling, and frying or any combination of these processes, depending on the species of fish, consumer preferences, and environmental influence.<sup>[6-10]</sup>

Women play very important roles in fisheries-related activities; these activities include processing and marketing of fish products, reported that the non-recognition of women labor for domestic chores is reinforced by the unequal allocation of resources. Thus, the lack of access and control over productive resources is the main factor limiting women participation in economic activities including fish processing, thereby limiting their potential. In the developing world, women living in coastal environment participate in small-scale fishery sectors as fishers, traders, fish farmers, and processors<sup>[11-25]</sup> In the coastal areas of Rivers State, the role of women in fisheries-related activities such as processing in these areas is very crucial and critical to the overall economy of the area, but policymaker usually overlook the important role that women play in fishery activities. This study, therefore, evaluates the role of women in fish processing, in some coastal communities of Rivers state as an important tool for boosting food security and improving the livelihood of the people in these communities.<sup>[16-23]</sup>

## MATERIALS AND METHODS

The study was conducted in five coastal communities, namely Buguma, Abalama, and Ilelema (Asari-Toru Local Government Area), Obuama (Degema Local Government Area), Abonnema (Akuku-Toru Local Government Area) all in Rivers State, Nigeria. These areas are surrounded by large water bodies and the vegetation in this area varies from mangrove to evergreen swamp forest. The prevailing climatic condition thus favors thriving fishery activities. Data were collected with the aid of structured questionnaires, following the method described.

It was distributed 10 per community, making it a total of 50 questionnaires. Questionnaires were administered only to female fish processors and they were interviewed at mangrove swamps, jetties, fish landing spots, smoking hut, houses, and market squares. The structured questionnaires were used to extract the socioeconomic characteristics which include age, marital status, household numbers, educational level, year of processing experience, species of fish being processed, reasons for engaging in fish processing, type of equipment used in processing, occupational hazards associated with fish processing, and the constraints facing the fish processors.

## STATISTICAL ANALYSIS

Completed questionnaire was collated and analyzed using descriptive statistical tool, involving the use of central tendency such as frequency, percentage, and charts to explain the various variables of interest.

## RESULTS AND DISCUSSION

### Socioeconomic Characteristics of Respondents

The socioeconomic characteristics of respondents in the study area are described in Table 1. The results revealed that 46% of the respondents were within the age range of 33–41 years. The proportion of married women fish processors was highest (54%). Majority of the respondents (50%) had household number of 4–6. This observation is in agreement with the report of Cliffe and Akinrotimi (2015), in some fishing communities, that most women fishers are matured, married and have a high household number. A high level of education was observed among the respondents, as only 6% had no formal education, while 54% were educated up to secondary school level. This finding agrees with that of Aqeela *et al.* (2005) that two-third of the 1 billion illiterate persons in the world are women and girls. Some of the respondents (42%) were also engaged in fishing activities and about 24% also engage in petty trading, while 34% only engaged in fish processing as a means of livelihood. This result is in line with that of Bako (2005) in some fishing communities of Kainji Lake in Nigeria. This may be due to an act of being proactive on the parts of the women in ensuring food security, generate income, and reduced feminine vulnerability within the family.

## Types of Processing Methods Used by the Respondents

The type of processing methods used by the respondents is shown in Table 2. Majority (80%) of the women used smoking method in processing of fish, while 6%, 4%, and 10% of the respondents used oven, sun, and frying methods, respectively, to process their fish in the study areas. This result corroborates with the report of Odulate *et al.* (2011) who reported the same trend among women fishers in the coastal areas of Ogun State in Nigeria.<sup>[23-26]</sup>

## Species of Fish Processed by the Women [Table 3]

Species such as sardine, mullets, and tilapia are the fish processed by the women on regular basis. These species are peculiar to the brackish water areas of Nigeria. Here reported that species such as sardines, mullets and tilapias are among the dominant species found in most of the coastal communities of Niger Delta and they are readily available all the year round.

## Reasons for Involvement in Fish Processing

Several reasons are behind the involvement of the respondents in fish processing. The results in Table 4 indicated that the major reasons for involvement in fish processing were to generate income for meeting of their daily, personal, and family needs. This was followed by the need to generate savings. These observations agree with the findings of who reported that fishers in coastal communities generate income to meet their personal and family needs.

## Type of Equipment Used in Processing

The type of equipment used in processing of fish by women this area is presented in Table 5. The locally made mud and half drum smoking kiln account for the highest equipment used by the women processors in these areas. The reason for this may be due to the fact that it is cheap, available, and easy to handle.

## Occupational Hazards in Fish Processing

The occupational hazards in fish processing are shown in Table 6. The result indicated that four major occupational hazards were reported by

the respondents, namely redness/swelling of the eye, skin rashes/eczema, offensive body odor, and bruises. A study by Cliffe *et al.* (2011), they

**Table 1:** Socioeconomic characteristics of respondents

Variables	Frequency	Percentage
Age (years)		
24 – 32	14	28
33 – 41	23	46
42 – 50	10	20
>50	3	6
Total	50	100
Marital status		
Single	16	32
Married	27	54
Divorced	4	8
Widowed	3	6
Total	50	100
Household number		
1 – 3	9	18
4 – 6	25	50
7 – 10	10	20
>10	6	12
Total	50	100
Highest educational qualification		
Primary education	13	26
Secondary education	27	54
Tertiary	7	14
No formal education	3	6
Total	50	100
Quantity of fish processed daily (kg)		
1 – 5	36	72
5 – 10	12	24
>10	2	4
Total	50	100
Other occupation		
Fishing	21	42
Petty trading	12	24
None	17	34
Total	50	100
Year of experience		
1 – 5	13	26
6 – 10	29	58
>10	8	16
Total	50	100

**Table 2:** Types of processing methods used by respondents

Processing methods	Frequency	Percentage
Smoking	40	80
Oven drying	3	6
Sun drying	2	4
Frying	5	10
Total	50	100

**Table 3:** Species of fish processed by the women

Species	Frequency	Percentage
Red snapper	7	14
Mullets	14	28
Sardine	10	20
Tilapia	16	32
Croaker	3	6
Total	50	100

**Table 4:** Respondents Reasons for Engaging in Fish Processing

Species	Frequency	Percentage
Family needs	20	40
Personal needs	12	24
Daily needs	10	20
Generate savings	8	16
Total	50	100

**Table 5:** Type of equipment used in processing

Equipment	Frequency	Percentage
Half drum smoking kiln	15	30
Full drum smoking kiln	9	18
Improved modern smoking kiln	1	2
Locally made mud kiln	25	50
Total	50	100

reported that every aspect of fishery activities has a peculiar occupational hazard that is associated with their operational mode.

### Constraints Faced by Women Fish Processors

The constraints in fish processing are presented in Table 7. The result revealed that the major constraints faced by women fish processors insufficient capital, lack of improved processing facilities, and storage facilities.

### CONCLUSION AND RECOMMENDATIONS

Women in the study area processed small quantity of fish daily, hence, earned low income due to lack of accessibility to productive resources such as capital, modern technologies, extension services and training, and other constraints they faced which include inadequate storage facilities and poor marketing arrangement. The attempt to minimize post-harvest losses and ensuring utilization of fish and fishery products is very important and imperative. Hence, the followings are recommended. There is a need to train and

**Table 6:** Occupational hazards in fish processing

Hazards	Frequency	Percentage
Skin rashes/eczema	16	32
Redness/swelling of the eye	12	24
Offensive body odor	10	20
Wounds/bruises	12	24
Total	50	100

**Table 7:** Constraints faced by women fish processors

Constraints	Frequency	Percentage
Insufficient capital	10	20
Lack of modern fish processing facilities	12	24
Inadequate extension services	2	4
Insufficient storage facilities	8	16
Poor marketing strategies	6	12
Lateness/scarcity in supply of fresh fish	12	24
Total	50	100

educate women fish processors with respect to adoption of modern fish smoking technology. Improvement of smoked fish quality could help to minimize post-harvest losses. Women fish processors should be educated on how to form and manage cooperative societies. These will help to give them a good bargaining power for their products which will lead to sustainability of their processing activities and enhance their livelihoods.

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