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Gender roles in fisheries post-harvesting activities in catch-locations within Coastal Areas of Lagos State Nigeria

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This study examined the gender roles in Fisheries Post-harvesting Activities (FPhA), which stems from a significant knowledge gap regarding gender roles in the subsistence fishery industry. The research was conducted in five catch-locations within the coastal areas of Lagos State, Nigeria, namely: Ikorodu, Badagry, Epe, Lekki and Makoko. The respondents were selected using purposive and snowballing sampling techniques. A validated structured questionnaire was used for data collection. Chi-square analysis (x^2= 22.6, df 2) revealed that gender participation was significantly different (P<0.05). The study identified 'knife', 'smoking kiln' and 'baskets' as the major equipment used by fisher folks; while it also noted "personal interest", and "a means of sustenance" as the main reason(s) for participation. Findings across the locations show that despite the fact that both genders are engaged in various FPhA; certain activities are gender specific. To aid the efficiency of fisher folks in FPhA, fish processing center with modern facilities should be built across the catch locations. Policy makers in the domain of FPhA should involve women in policy formulation and decision-making due to their huge clear dominance. Finally, to bridge the gender participation gap in FPhA for employment and income purposes, there is a need for training and capacity building targeted especially for male fishers.

Key words: Gender, male, female, Fisheries Post-harvesting Activities (FPhA), catch-locations.

INTRODUCTION

The act of fishing has been one of the major economic activities of human beings which transverses many generations. According to FAO (2018), global total capture fisheries production was 90.9 million tonnes in 2016, with significant contributions to supplies of food, employment, income and well-being of artisanal fisher folks in coastal, riverside and lakeside communities who are directly dependent on fishing and related activities for their livelihoods (Allison et al., 2009).

While it is widely known that men are predominantly the harvester of wild fish species (Olubanjo et al., 2007) and women are engaged in fish processing, marketing

and distribution, these facts are changing. Lambeth et al. (2002) noted that women are now involved where only men used to operate and vice versa.

The coastline in Nigeria, and especially of the coastal Local Government Areas (LGAs) of Lagos State, is well- endowed with river networks, and a large expanse of exclusive ocean waters for commercial fishing. Also, capture fisheries account for over 90 percent of the total annual fish production in Nigeria (Olaoye et al., 2012; NIOMAR, 2011) and culture fisheries contribution to fish was estimated at 6.06% (Ozigbo et al., 2014; NIOMAR, 2011). Consequently, several of the natives and residents in coastal (or littoral) states and communities in Nigeria are involved in the capture fisheries sub-sector of the nation's economy.

According to Sinkaiye (2005), gender is a term often associated with roles and responsibility of males and females in the society, as a social classification of sex. It is the socio-cultural differences between males and females as against the biological differences. Gender is a concept used in social science analysis to look at roles and activities of men and women (IITA, 1996). Knowledge of gender roles are an important part of fisheries management because it allows interventions to be tailored to specific groups of fishers.

Thus, there is a need for data that accurately defines the nature of coastal fisheries and associated postharvest activities that informed the present study. This study, therefore, aims to identify the post-harvesting activities that fishers engage in across small-scale fisheries within the coastal area of Lagos, Nigeria. The objective of the study amongst others is to: describe the socio-economic characteristics of the respondents; ascertain various FPhA carried out by both gender; identify equipment used in FPhA, and ascertain reason(s) for gender participation in FPhA sector in the study areas.

HYPOTHESIS OF THE STUDY

The hypothesis of the study is stated in null form (H_o). H_o = There is no significant difference in gender roles in FPhA in catch-locations within the coastal areas of Lagos State.

METHODOLOGY

Description of the study area

The study was conducted between June and November, 2017 in five coastal zones of Ikorodu, Badagry, Epe, Lekki (Ibeju-Lekki) and Makoko (Lagos Mainland) in Lagos State, Nigeria (Figure 1). The state is situated in the Southwestern geo-political zone of Nigeria. It shares boundaries with Ogun State, both in the North and East and is bounded in the West by the Republic of Benin. Its Southern border stretches for about 180 km along the coast of the Atlantic Ocean. The State occupies an area of 3,577 km²

landmass with about 22% (786.94 km²), representing the Lagos lagoons. Lagos State is very rich in different forms of aquatic ecological zones that support different varieties of fish species and aquatic organisms; thereby providing productive fishing opportunities for fishers. Lagos is home to traders, artisans, industrialists, civil servants, and office workers.

Sampling techniques and sample size

The population of the study comprised both men and women that engage in fishing in the coastal area of Lagos State, Nigeria. In the absence of a comprehensive list of the respondents who are involved in post-harvesting fish activities in the study area, purposive sampling and snowballing techniques were used to select the respondents. Snowballing sampling techniques, the process of selecting respondents based on referral-chain on the subject matter, was used to generate respondents who formed the focus of the study. In the course of administering the questionnaire, the target was 15 respondents for each of the five catch-locations, which implies 75 respondents. However, only 60 respondents were sampled as indicated in Table 1, which translates to 80% total respond and this was used for the analysis carried out.

Validity and reliability test of the questionnaire

Validity is the degree to which an instrument and its measurement serve the purpose for which they were intended. Face and content validity was used to adjudge the questionnaire. Experts in the Department of Agricultural Extension and Rural Development of Federal University of Agriculture, Abeokuta were contacted to carry out the assessment for face validity. The content validity of questionnaire was done by computing the level of agreement, (on appropriateness of the content of the questionnaire) between five judges who are experts in the area of post-harvest research survey in the Research Outreach Department of Nigerian Stored Products Research Institute, Lagos (NSPRI). The coefficient of concordance (w) was 0.76, an indication that the content is valid.

Reliability is the degree of consistency of measurement. For this study, test re-test method of reliability was employed. The questionnaires were pre-administered on eight respondents in a day trip to two catch-locations in Ogun Water Side Local Government in Ogun State. The results were correlated using Spearman-rho correlation. The coefficients of reliability (r) was r = 0.77, thus adjudging the questionnaire as being reliable.

Data analysis

Using SPSS 20.0, the data collected were subjected to descriptive and inferential statistical analysis. Inferential statistical tool, such as Chi-square, was used to determine gender role in post-harvesting activities at 0.05 level of significant.

RESULTS AND DISCUSSION

Socio-economic characteristics of the Respondents

Result in Table 2 showed that the mean age of the respondents was 52.5 years, which indicate economically active fisher folks in tandem with (Olaoye et al., 2012). Most (75%) of the respondents were females, while 25% were males; this goes to show the
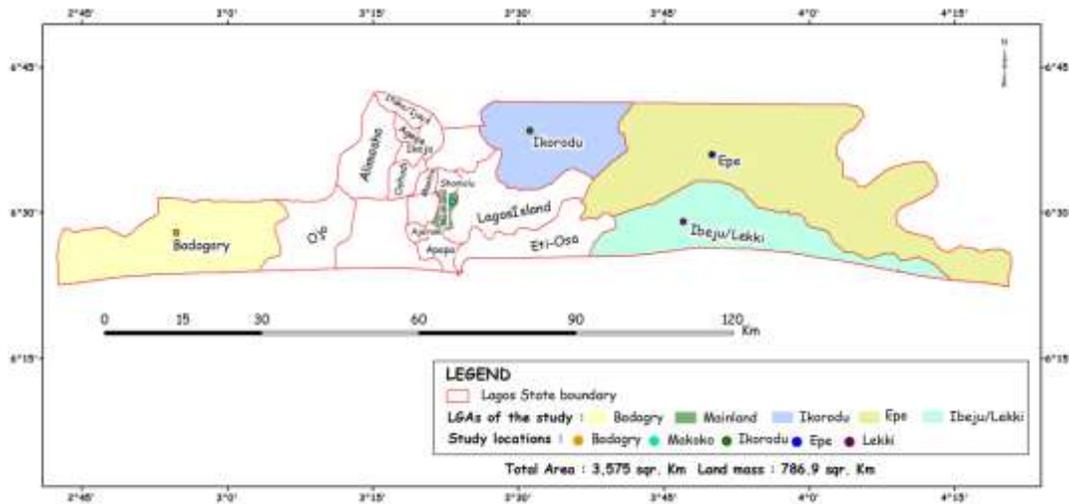
Figure 1. Map of the study area indicating the five coastal zones.

Table 1. No of respondents in catch-locations.

S/N	Lagos Coastal LGAs Sampled	Catch-Locations	No. of Respondents
1	Badagry	Ajindo, Topo, Gbethrome, Yovoyan, Yeketomeh	18
2	Epe	Odo-Egiri, Iraye-Oke, Ikoikin	12
3	Ikorodu	Ibeshe, Ijede, Igbalu	11
4	Ibeju-Lekki	Iberikodo, Alade, Aiyeteju, Awoyaya	14
5	Lagos Mainland	Makoko	5
Total			60

Source: Field survey 2017.

dominance of the female fishers in post-harvesting activities, which is in agreement with Kronen and Vunisea (2007) and Tawake et al. (2007), that women are involved in post- harvest activities, marketing and distribution of marine products. With 25% of the respondents as males, it goes further to show that post-harvesting activities is no longer women affair; this is in line with Lambeth et al. (2002) who submitted that with new technologies, activities in fisheries are no longer gender specific. The findings of this study further revealed that majority (80.0%) of the respondents were married with 4-6 members in their households, which could imply availability of cheap labor for the household head. Most (75%) of the respondents had one form of formal education or the other, indicating the ease of adopting new innovations; this corroborates with the findings of Akingba et al. (2017) who reported high educational level for fisher folks in some fishing communities of Ondo State. On the contrary, Olaoye et al. (2012) showed 60.0% of respondents as uneducated. About 75.0% of the respondents in the catch-locations indicated post harvesting activities as their major occupation with mean annual income

estimated at ₦107.200, which infers that respondents had moderate income. This lends credence to the findings of Olaoye et al. (2012) who reported ₦86.300 income level for fisher folks in some communities of Ogun State.

Various equipment used in fish post-harvesting activities

Figure 2 shows different types of equipment used by the respondents in post harvesting activities. Knife ranked 1st, smoking kiln 2nd and basket 3rd, these three equipment were the most used in post harvesting of fish in the study location. Wire mesh ranked 4th, bowl ranked 5th, and drum 6th. Across the catch-locations, the study revealed that the equipment used in post-harvesting activities were the same and not automated.

Gender reasons for participation in fish post-harvesting sector

Based on multiple responses, Figure 3 represents

Table 2. Distribution based on respondents' socio-economic characteristics (n = 60).

Variables	Frequency	Percentage	Mean (x)
Sex			
Male	15	25.0	
Female	45	75.0	
Age (year)			
Less than or equal 30	5	8.3	
31 – 40	7	11.7	
41 – 50	20	33.3	
51 – 60	24	40.0	52.5years
Above 60	4	6.7	
Marital status			
Single	5	8.3	
Married	48	80.0	
Widowed	5	8.3	
Divorced	2	3.4	
Household Size (persons)			
1 – 3	15	25.0	
4 –6	38	63.3	5.3persons
7 –9	2	3.4	
Above 10	5	8.3	
Educational status			
No formal education	15	25.0	
Primary education	25	41.7	
Secondary education	15	25.0	
Tertiary education	5	8.3	
Fisheries as major occupation			
Yes	45	75.0	
No	15	25.0	
Fish Farming experience (years)			
Less than or equal to 10	18	30.0	
11 – 20	26	43.3	14.6years
21 – 30	11	18.3	
31 – 40	5	8.3	
Annual income (naira)			
Less than or equal to 20,000	3	5.0	
21,000 – 40,000	13	21.7	
41,000 – 60,000	9	15.0	
61,000 – 80,000	10	16.5	
Above 81,000	25	41.7	₦107.200

Various equipment used in fish post-harvesting activities.

gender reason(s) for participation in fish post-harvesting sectors in the study area. The study revealed "personal interest", "means of sustenance" and "market participation with female fishers' dominance. Thus, it
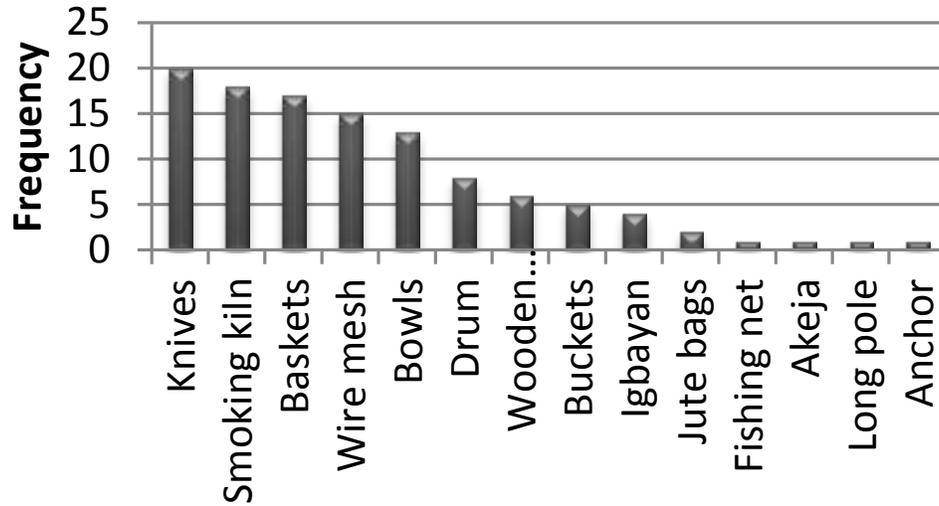
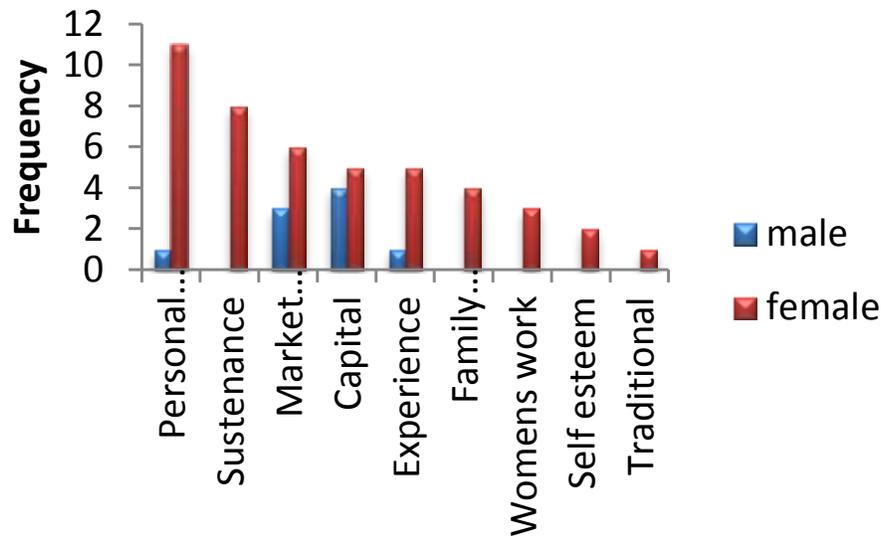**Figure 2.** Equipment used in post-harvesting activities.

Figure 3. Gender reasons for participation in fish post-harvesting sector.

could be inferred that participation in post-harvesting sector of fisheries may be unconnected with the socio-economic characteristics of the fisher folks.

Post harvesting activities carried out by male and female

Based on multiple responses, Figure 4 reveals various post-harvesting activities carried out by both male and female in the study area, it shows that fish processing such as sorting, packaging and purchase are gender specific, which could be regarded as the activities for women only. This is in line with Olubanjo et al. (2007)

who submitted that women are more involved in the low-ends of fishing activities. However, it was observed that male fishers now engage in fish smoking, marketing, drying and storage activities, as against earlier submission (Olubanjo et al., 2007) that they are only involved in the high-ends of fisheries activities.

CONCLUSION AND RECOMMENDATIONS

In this study, particular references were made of the equipment used by fisher folks in FPhA, gender reason(s) for participation as well as various activities engaged by both fisher folks in FPhA. However, it was observed that certain activities are gender specific as
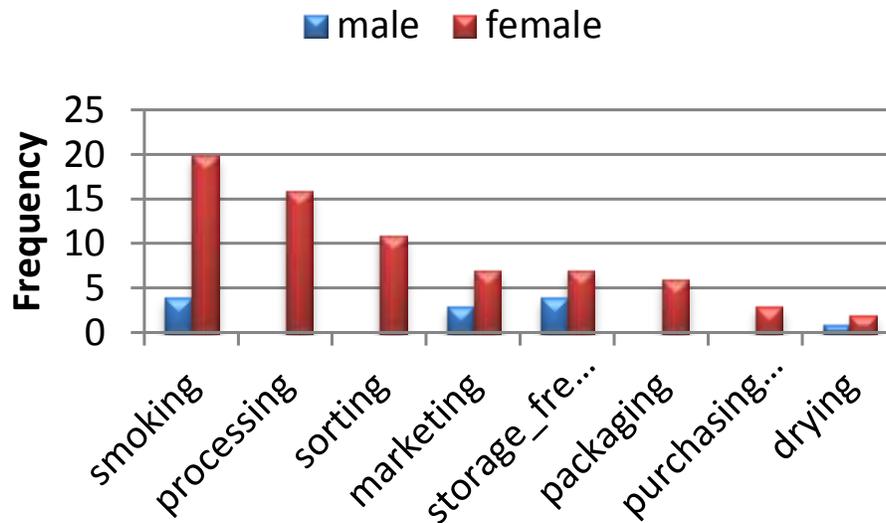
Figure 4. Post-harvesting activities.

depicted above (Figure 3). It was also noted that participation in FPhA has nothing to do with the socio-economic characteristics of the fisher folks. The study further reveals that fisher folks across the catch-locations employed the same equipment in fish processing, sorting, storage and preservation. To aid the efficiency of fisher folks in FPhA, fish processing center with modern facilities should be built across the study locations. Owing to the fact that women constitutes clear majority in this sector, they must be involved in policy formulation and decision-making.

CONFLICT OF INTERESTS

The authors have not declared any conflict of interests.

ABBREVIATIONS

FPhA, Fisheries Post-harvesting Activities; **NSPRI,** Nigerian Stored Products Research Institute, Lagos; **NIOMAR,** Nigerian Institute for Oceanography and Marine Research; **FAO,** Food and Agriculture Organization.

REFERENCES

Allison E, Allison P, Marie-Caroline B, Neil Adger W, Katrina B, Declan C, Ashley SH (2009). Vulnerability of national economies to the impacts of climate change on fisheries. Fish and Fisheries 10(2):173-196.

Akingba O, Afolabi A and Ayodele P (2017). A study of the socio-economic indices of the fisher folks in five fishing communities in Ondo State, Nigeria. Africa Journal of Fisheries Science 5(3):222-228.

Food and Agriculture Organization (FAO) (2018). The State of World Fisheries and Aquaculture. Food and Agriculture Organisation of the United Nations, Rome, Italy. ISBN: 978-92-5-130562-1

International Institute of Tropical Agriculture (IITA)(1996). Annual Report. International Institute of Tropical Agriculture, Ibadan, Nigeria. Annual Report Booklet pp. 13-15.

Kronen M, Vunisea A (2007). Women never hunt – but fish: Highlighting equality for women in policy formulation and strategic planning in the coastal fisheries sector in Pacific Island countries. In Women in Fisheries Bulletin, Secretariat of the Pacific Comunity, Noumea.

Lambeth L, Hanchard B, Aslin H, Fay-Sauni L, Tuara P, Rochers KD, Vunisea A (2002). An overview of the involvement of women in fisheries activities in Oceania. InGlobal Symposium on Women in Fisheries. ICLARM-WorldFish Center. pp. 127-142

NIOMAR (2011). Annual Report. Nigerian Institute for Oceanography and Marine Research. VI, Lagos Federal Department of Fisheries (FDF), Fisheries Statistics.

Olaoye OJ, Idowu AA, Omoyinmi GAK, Akintayo IA, Odebiyi, OCA Fasina AO (2012). Socio-Economic Analysis of Artisanal Fisher Folks in Ogun Water-Side Local Government Areas of Ogun State, Nigeria. Global Journal of Science Frontier Research Agriculture and Biology 12(4):9-22.

Olubanjo OO, Akinleye SO, Balogun MA (2007). Occupational characteristics, technology use and output determinants among fisher-folks in Ogun Waterside Area, Ogun State. FAMAN (Farm Mgt Ass. of Nig.) Journal 8(2):1.

Ozigbo E, Anyadike C, Adegbite O, Kolawole P (2014). Review of Aquaculture Production and Management in Nigeria, American Journal of Experimental Agriculture 4(10):1137-1151.

Sinkaiye T (2005). Agricultural Extension Participating Methodologies and Approaches in Agricultural Extension in Nigeria, Afolayan SF (Ed) Ilorin AESON, pp. 220-233.

Tawake A, Vuki V, Aalbersberg B (2007). Fishing for Anadara: A case study of Ucunivanua village in Verata, Fiji Islands. In SPC Women in Fisheries Bulletin, Secretariat of the Pacific Community, Noumea.