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Status and Constrains of Artisanal Fisheries in Ekperiama (Ekperikiri) Fishing Area, Niger Delta

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ABSTRACT

This study investigated the status and constrains of artisanal fishers in Ekperiama (Ekperikiri) fishing area in the Niger Delta. Data were collected from well structured questionnaire and subjected to descriptive statistical analysis and Likert scale technique. The results reveal that 70.40% of the fishers were males while 40.40% were in the active age distribution of 41- 50 year. Most of the fishers (66.10%) attempted primary education and 41.90% are in the bracket of 21-30 year fishing experiences suggesting that most fishers had fished for a minimum of 21 years. The major constraint was the crude oil pollution rampant in the Niger Delta and invasion of aquatic weeds. Others were; lack of extension services, lack of credit facilities and the use of chemicals to fish. If these contraints are properly addressed, it could boost fishing activities which could also improve the livelihood of the fishers.

INTRODUCTION

Nigeria is blessed with numerous human and natural resources, having 14 million hectares of reservoirs, lakes, ponds and major rivers. These Water bodies are usually exploited by artisanal fishers within the aquatic environment, where different species of fin and shell fish are caught. Artisanal fisheries are traditional fisheries involving fishing households (as opposed to commercial companies), using relatively small amount of capital and energy, relatively small fishing vessels (if any), making short fishing trips, close to shore and mainly for local consumption [1].

Artisanal fisheries practice varies from country to country. It could be as small as a one man-canoe in poor developing countries, to about 20m trawlers, seiners or long-liners in developed countries. Artisanal fisheries are sometimes referred to as small-scale fisheries or traditional fisheries that are not mechanised with low level of production [2]. However, they are the prominent fisheries in tropical developing counties [3]. They can be subsistence or commercial fisheries providing for local consumption or export.

In Nigeria, artisanal fishers are mostly found along the coastal regions; in rivers, lagoons and creeks. The operating range of small-scale fisheries is apparently 20m depth contour, extending occasionally to a maximum depth of 40m [4] and 5 neutical miles away from the seashore [5].

Artisanal fishers operate from dug-out wooden canoes that are more often than not non-motorised [6]. Traditional dug-out canoes used by artisanal fishers range between 3-8 meters [7, 8].The vessels are categorised into small, medium and large having average lengths of 3m, 5m and 8m respectively. A small canoe is conveniently operated by one person, while the medium and large canoes are operated by 2 and 3 persons respectively on a fishing trip. The large canoes are powered by an 8 horse power out-board engine, while the small canoes are manually powered [7] with an average of 3 fishers per boat [7, 9, 10].

Fishing is an occupation engaged by both male and female irrespective of age [7] . Though, fisheries sector is dominated by men; contribution of the women cannot be undermined. Women continually use traps and nets to catch fish in most fishing communities in

Nigeria and are actively involved in fish processing and marketing [11]. However, factors such as restricted access to water resources, low technical know- how and lack of credit facilities limit women full participation in the small-scale fisheries.

Gears used by artisanal fishers are mostly traditional and easily found in the locality. In Nigeria, artisanal fishers use gears such as cast nets, handlines, basket traps, long lines, gillnets ,beach nets and purse seines. More than 70% of fishers use more than 3 fishing gears [12] during fishing operations. The objective of this study is to investigate the status of artisanal fishery in Ekperiama fishing area, with a particular emphasis on constrains and possible solutions for improving the fishery sector that could have positive impact on the livelihood of the people.

MATERIALS AND METHODS

Description of Study Area

The research was carried out in Ekperiama, forrmally known as Ekperikiri, a passage way from Okoroama in Nembe Local Government Area. Study site (Fig1) is 51.5 km south of the capital Yenagoa in Bayelsa State and is situated in the heart of the Niger Delta. Ekperiama is a sister community to Akakumama, Oruweiama and Kukukiri located around the Ogbia creek on the south-eastern part of Bayelsa State. All communities share very close ties, often participating in common fishing trips and other economic activities.

The creek is tidal and it is characterized by both estuarine and freshwater macrophytes that includes; *Rhizophora racemosa* (Red mangrove) and *Raphia hookeri* (raffia palm), *Eicchornia crassipes* (water hyacinth), *Nymphae lotus* (watere lily) and *Pistia stratiotes* (water lettuce). Dry season is from November to Febuary and the rainy season peaks between July–September. The annual rainfall of the Niger Delta ranges from 2000mm – 3000mm per year [13].

The dry season lasts for four months (November- February) with occasional rainfall. The creek is also subjected to pollutants from petroleum exploration and exploitation activities in the Niger Delta that may have impacts on the ecosystem [14].

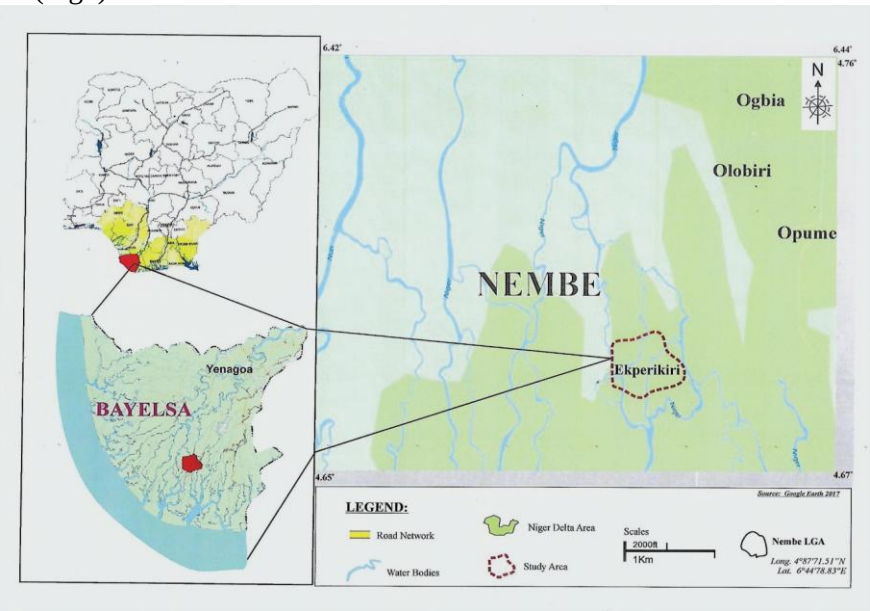

Figure 1. *Map of study area*

Data Collection

Data for the study were collected through primary sources. Questionnaire were designed with both opened and closed ended questions relevant to the objectives of the study and administered randomly to artisanal fishers in the study area. Respondents were expected to choose from among the alternative questions provided in the opened ended questions while, in the closed ended questions they were free to express their option in writing.

Data Analysis

Descriptive statistics which include frequencies, percentages and tabulation was used to describe the status of the respondents. Lirket scale technique was used to analyse constraints faced by the fishers.

RESULTS

Results on the demographic characteristics of the fishers as shown in table 1 revealed that both men and women are actively involved in artisanal fishing in the study area. A total of 183 fishers were males and 77 females was recorded. Men comprised 70.40% of all the respondents while women were 29.60%. Both men and women are also engaged in marketing of the products, but processing of the product was solely done by the women.

From the study, 12.70% of the fishers were less than 20 years, while 16.50% were between 21-30 years. A total of 41 (15.80%) fishers were between 31-40 years, 105 fishers with a percentage of 40.40 were between 41-50 years and for the age of 51 and above, 38 fishers were recorded with a percentage of 14.60. The least age range recorded was 0-20 years because most of the fishers in this age range were students, while the highest age range between 41-50 years were the very agile and strong fishers that have responsibilities. The mean age range estimated in the study area was 30.28 which correspond to age range of 31-40 years.

About 33.90 percent of the fishers had formal education, while 66.10 percent did not. The mean level of educational attainment for all the fishers sampled was 1.47, which means most of the fishers had some form of primary education. A total of 172 (66.10%) fishers do not have the first leaving certificate, but attended primary school, 20.80% of fishers had the first leaving certificate and attempted secondary education, while a total of 34 (13.10%) fisher completed the secondary education.

Fishing experience, which is the number of years spent in fishing by fishers in the study area, are shown in table 1. Most of the fishers had fished for a period of between 21-30 years. A total of 22 fishers had fished for less than 10 years, 30 percent of the fishers had fished for between 11 and 20 years, while 51 fishers which represents 19.60% of the total number of fishers had fished for more than 31 years.

Table 1. *Demographic Parameters of Fishers operating in Ekperikiama (Ekperikiri) Fishing Area, Niger Delta*

Parameter	Range	Frequency	Percent
Gender	Males	183	70.40
	Females	77	29.60
	Total	**260**	**100.00**
Age (years)	≤ 20	33	12.70
	21-30	43	16.50
	31-40	41	15.80
	41-50	105	40.40
	51- above	38	14.60
	Total	**260**	**100.00**
Educational Level	Primary education attempt	172	66.10
	Secondary education attempt	54	20.80
	Secondary school certificate holders	34	13.10
	Total	**260**	**100.00**
Fishing Experience	≤ 10	22	8.50
	11-20	78	30.00
	21-30	109	41.90
	31- above	51	19.60
	Total	**260**	**100.00**
Marital status	Single	18	6.90
	Married	212	81.50
	Divorced	15	5.80
	Widows	12	4.60
	Widowers	3	1.20
	Total	**260**	**100.00**
Household size	≤ 5	57	21.90
	6-8	126	48.50
	9-10	47	18.10
	10-above	30	11.50
	Total	**260**	**100.00**

About 6.90 percent of the fishers were single, while 81.50 percent were married. The mean marital status was 2.11, which means most of the fishers were married. A total of 15 (5.8%) fishers were divorced. The widows were 12 (4.20%), while widowers were 3 (1.50%). A total of 47 (18.10%) house hold size was between 9 and 10, while 30 (11.50%) fishers

household size was more than 10. About 21.90 percent of the fishers household size was less than 5, while 48.50 percent was between 6 to 8 persons.

Fishing Gears

Fishing gears used by fishers in the study area consist mostly of gill net, drift nets, hook and line, and traps. These gears are categorized as passive because they are positioned for capture. Length of the gill nets range between 30 – 100 metres and about 3 metres in breadth. The mesh size ranged from 50mm to 100mm thereby preventing harvest of juveniles. Hook and line was also in use. They were mainly effective for capture of bigger fishes. Traps were mostly used in the capture of shrimps.

Constrains of Artisanal Fisher'S

Likert scale technique was used to analyze constrain faced by artisanal fishers in the study area. As shown in Table 2, the constraints include: risk of vessel capsizing and loss of gear which occurs mainly during the rainy season. The major constraints (very critical) were the crude oil pollution rampant in the Niger Delta and invasion of aquatic weeds. Others were; lack of extension services, lack of credit facilities and the use of chemicals to fish. Fishers had a good level of cooperation (2.28) among themselves. Non-availability of bait as well as lack of storage facilities were not really constraints faced by fishers

Table 2. *Constraints faced by artisanal fishers*

s/n	Constrains	1	2	3	4	5	Score	Points	Ranks
1.	Non-availability of bait	40	59	57	51	53	798	3.07	x
2.	Piliferation of catch	8	12	38	74	128	1082	4.16	xx
3.	Loss of gear	10	24	26	38	162	1098	4.22	xx
4.	Risk of vessel capsizing	20	20	20	80	120	1040	4.00	xx
5.	Crude oil pollution	5	8	8	61	178	1179	4.53	xxx
6.	Chemical fishing	4	14	22	82	138	1116	4.29	xx
7.	Lack of credit facilities	21	9	41	76	113	1031	3.97	xx
8.	Lack of storage facilities	42	61	55	50	52	789	3.03	x
9.	Lack of fishers cooperation	85	73	66	16	20	593	2.28	x
10.	Lack of extension services	30	27	48	60	95	943	3.63	xx
11.	Invasion of aquatic weeds	4	10	11	60	175	1172	4.51	xxx

2 - 3.5 (x) = Not so critical
3.51-4.40 (xx) = Critical
4.41-5.00(xxx) = Very critical

DISCUSSION

The status of the artisanal fishers presented indicated that both men and women were actively involved in artisanal fishing in the study area. This finding reveals that fishing is not exclusively the right of the men. The high number of females dominating the fishing operations agrees with that of [15] [16] [17] that 45 to 65 percent of women actively participated in fishing activities in most parts of Nigeria. The less than 30% of women participation in fishing [8] [18] could be attributed to cold weather condition experienced in the Niger Delta. Though, women are involved in fishing, by the use of traps [11], and picking of periwinkles as well as processing, they are not involved in large catch as hauling involves physical strength.

The age range of between 31- 40years in the study area falls within the active age range of artisanal fishers in the Niger Delta [18- 20]. This shows that fishing is carried out by adults. Younger fishers were more involved in pursuit of their academic and professional careers outside the community because they don't find the fishing business lucrative. Hence, have opted for other occupation which they find more profit oriented.

As revealed in the study, 66.1% of the fishers do not have formal education, but are well experienced in the act of fishing [18- 20]. The mean level of educational attainment for all the fishers in the area was primary education. The findings agrees with those of [8]. This implies that the artisanal fishers had some form of formal education [18].Lack of education among men and women in fishing communities in West Africa posed significant constraints on sustainability in artisanal fisheries, just as it will do in farm production in general [11]. This is not the case with the fishers in Ekperiama.

Though they are not formally educated, they have informal education with the experience gained from many years of fishing and by observating the changes in the fishing industry as well as the aquatic environment. With experience, a fisher is able to discern when and where to fish at a particular season. The more experience a fisher has, the higher his capability in fishing in the face of competition and dwindling fish stocks [8].

High percentage of married fishers (81.5) recorded in the study area indicates the level of relationship among fishers. Married couples have the tendency to cooperate and assist each other in whatever they do to accomplish a common goal that would better the future. Another possible reason might be linked to the fact that married people have more pressing demands and problems at hand to solve than the unmarried (singles) and those that are divorced [20].

A large household size as recorded in the study area is an indication of cheap and free labour. The household size of about 78.1 percent of the fishers is above five. This implies that the larger the size of the family of the fisher, the higher the quantity of fish caught [8],which when sold will meet their financial needs.

The large mesh size (50-100mm) of gill net employed by fishers indicates to some extent conservation measures for sustainability of the fisheries resource practiced by fishers in the study area. Fishers do not harvest juveniles [10] but allow for recruitment of the species. This attitude of the fishers could be due to the long years of fishing experience gained in the fishing industry. They have learnt that harvesting of juveniles is one of the factors that leads to depletion of fish stock, which, if minimized could sustain the fishery. Though, they employ the use of traps and longlines, juveniles caught in the process are not the target species but are caught incidentally. The large mesh size of these passive gear used by the fishers implies they are highly knowledgeable about the importance of conservation. The constrains faced by fishers in the study area is a general challenge of artisanal fishers in Niger Delta and Nigeria as a whole [22-26]. This implies that these are the major challenges encountered by artisanal fishers in most parts of Nigeria.

Conclusion

Government paying attention to the fishers by providing adequate extension services, storage facilities and address the issue of crude oil pollution, provide capital in form of credit facilities will greatly improve fishing activities in the study area. This will alleviate their nutritional value, raise income and socio-economic status of the fishermen.

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